Reasons and Barriers for Exercise as Moderators in the Relationship between Exercise and Body Image within a Student Population

by

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Abstract

A review of the literature published on exercise and body image in a student population has established that there is a need for further information and exploration with regard to this topic. Exercise participation may be motivated or demotivated by the perceptions (benefits/barriers) held around exercise. The purpose of this study was to examine these benefits and barriers of exercise by ascertaining whether they moderate the relationship between exercise participation and body image. As body image is principally formed during adolescence and young adulthood (Leone et al., 2011; Mwaba & Roman, 2009), a sample of 49 university students ranging between the ages of 18 and 29 years (mean = 20.55) were asked to complete an online survey consisting of the Exercise Benefits/Barriers Scale (EBBS) and the Multi-Dimensional Body-Self Relationship Questionnaire (MBSRQ), as well as a biographical section. The sample consisted of first, second and third year students of various ethnicities and exercise levels, with 85.7 % being female and 14.3 % being male participants. In order to explore the general research hypothesis of this study namely that barriers and benefits to exercise participation will moderate the relationship between exercise and body image, a Pearson's Product Moment Correlation Coefficient analysis was first conducted in order to examine the relationship between the variables of interest and to check for multicollinearity between the variables in this study (exercise and body image perceptions). A moderated multiple regression analysis was then conducted to determine the extent to which exercise predicts body image, while examining the possible moderating role of reasons for, and barriers to exercise. The current study's results reported significant correlations between exercise perceptions (benefits and barriers), exercise (training hours), and body image. However, the general hypothesis that barriers and benefits to exercise participation will moderate the relationship between exercise and body image was not supported. The results of the regression analysis can principally be attributed to the small

sample size which did not comply with the requirements for a moderated multiple regression analysis, thus the results should be interpreted with caution. Future directions and recommendations are that a large enough sample, consistent with the requirements for a moderate multiple regression, be obtained. The sample should be equally proportionate in gender. It is recommended that multiple measures be used for future research and that these measures be administered in person to avoid difficulty in deciphering data. Furthermore, similar research should be made into the Black African population of South Africa in order to add to the limited pool of literature, as body image is determined differently in each culture and the majority of literature is based on a Western perspective.

Keywords: exercise, body image, benefits and barriers of exercise

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CHAPTER ONE

1. INTRODUCTION

The concept of body image has evolved since its original rooting in neuropathology when enquiry into body image began, with neurologists researching unusual body perceptions and distortions in the 1900s (Cash & Smolak, 2011). During that time, the focus was on the "body schema" which was considered the neural mechanism that controlled movement and posture (Cash & Smolak, 2011). Later in the 1930s, Schilder focused on a biopsychosocial approach to body image (Cash & Smolak, 2011). His colleagues, Fisher and Cleveland (1958), emphasised the body image boundaries more psychodynamically in terms of the unconscious strength and permeability of these body boundaries (Cash & Smolak, 2011). Schontz (1969) reconceptualised the term by developing a multifaceted perceptual and cognitive approach to body image. In 1990, Cash and Pruzinsky followed in the same direction, focusing on the multidimensionality of body image, and moved towards a cognitive-behavioural approach to body image (Cash & Smolak, 2011). A cognitive-behavioural approach to body image considers the perceptions and cognitions associated with body image and their influence on the individual's behaviours (Cash & Smolak, 2011).

As mentioned above, body image has been understood from a variety of medical and psychological perspectives, and knowledge on this topic has continued to expand and evolve over the last century. Body image has had a number of different definitions over the years, which has resulted in the evolution of the concept, with Cash (2004) best describing body image as being a multi-dimensional facet of self. This study adopted Cash's perspective of body image. In defining body image as a multifaceted psychological experience, Cash (2004) explains that it is "....not exclusively one's physical appearance. ...It encompasses one's body-related self-perceptions and self-attitudes, including thoughts, beliefs, feelings, and behaviours" (Cash, 2004, p. 1). As such, Cash developed his model from a cognitive-

behavioural perspective, taking into account thoughts and beliefs, and their influence on behaviour and emotions. Cash's (2004) cognitive-behavioural model views historical and proximal events as instrumental in shaping and sustaining body image experiences while formulating the thoughts and perceptions around body image and, in essence, body image itself (Cash, Santos, & Williams, 2005). Thoughts and perceptions around the individual's body image play a key role in the development of body image. The thoughts, beliefs and perceptions of an individual's body determine whether they will have body image satisfaction or dissatisfaction (Cash, Ancis & Strachan, 1997). When considering the perceptions around appearance, negative perceptions of body image are commonly found during the adolescent and young adulthood phases of life (Leone et al., 2011; Mwaba & Roman, 2009). This research will focus on the perceptions that students, in their young adulthood phase of life, have of their body image.

Literature (Campbell & Hausenblas, 2009; Furnham, Badmin, & Sneade, 2002; Ingledew & Sullivan, 2002; Koyuncu, Tok, Canpolat, & Catikkas, 2010; Krishen & Worthen, 2011; Peltzer & Pengpid, 2012) suggests a relationship between body image and exercise; therefore, a student's perception of exercise also needs to be explored. Exercise has been said to be a key construct in forming body image (Markula, 2007). This research has defined exercise as one or more physical activities aimed at improving individual health (Edwards, 2006; Edwards, Ngcobo, Edwards, & Palavar, 2005). Due to the fact that exercise is said to be a key construct in forming body image, it is important to understand the perceptions around exercise and what determines an individual's exercise behaviour, as this will influence the relationship between exercise and body image. This information could lead to creating a needed change in the perception of exercise and inform future positive interventions for healthy living (Draper, Davidowitz, & Goedecke, 2016).

Research (Edwards et al., 2005; Gatab & Pirhayti, 2012; Withall, Jago, & Fox, 2011) focusing on exercise often concludes that there are both psychological and physical health benefits associated with exercising. The motivations for engaging in regular exercise include various perceived physical benefits; two of which are weight-loss and fitness (Krishen & Worthen, 2011; Wilcox et al., 2006; Withall et al., 2011). Psychological benefits of exercise include stress management, increased self-esteem, and revitalisation (Krishen & Worthen, 2011; Rasinaho, Hirvensaki, Leinonen, Lintunen, & Rantanen, 2006; Wilcox et al., 2006; Withall et al., 2011). These perceived benefits are likely to influence the individuals' choice to engage in exercise.

Another factor involved in choosing whether or not to participate in exercise is the individuals' perceived barriers. These barriers can be physical, cognitive, environmental or social, and inform the choice not to participate in exercise. The most common of these barriers include lack of time, the cost involved, having to exercise alone, lack of enjoyment or confidence, poor body image, lack of childcare, and work patterns (Rasinaho et al., 2006; Withall et al., 2011). These commonly perceived negative ideas about exercise (i.e. barriers to exercise) serve as obstacles in exercise participation, despite the fact that exercise may improve physical and psychological functioning. Specifically, body image has been found to be improved through regular exercise (Campbell & Hausenblas, 2009).

Considering the available literature on exercise (to be discussed in the next chapter), it seems likely that there are many positive benefits to be gained and negative barriers against exercise that may be formed, which could impact on an individual both physically and psychologically (Campbell & Hausenblas, 2009; Edwards, 2006; Gatab & Pirhayti, 2012; Markula, 2007). As mentioned above, extensive literature exists on both body image and exercise; however, sparse research exists on the perceptions that individuals have towards body

image and exercise, especially within a student population in a South African context (Draper et al., 2016; Myers & Roth, 1997).

The study aimed to explore the perceptions that students have around exercise, in relation to the development of body image satisfaction and dissatisfaction, thereby adding to the limited pool of knowledge. More specifically, this study aimed to achieve the following research objectives:

- to investigate the relationship between exercise and body image within a university student population;
- to determine student perceptions on exercise, including their reasons for (benefits) and barriers against exercise participation;
- to ascertain whether a relationship exists between, the reasons for and barriers against exercise (exercise perceptions), and exercise participation/frequency (demonstrated by the number of training hours); and
- to investigate the positive and/or negative influence of exercise participation on the multi-dimensional construct of body image (behaviourally, affectively, and cognitively), with barriers and benefits moderating the relationship.

Outline of thesis

In providing the abovementioned information, the researcher has given a background to the reasons why this research is important. The dissertation consists of six sections. Chapter one served as the introduction to the topic of interest, as well as an orientation to the research study. Chapter two consists of a review of the literature on body image, body image satisfaction and dissatisfaction, exercise, the benefits and barriers of exercise, and student lifestyle. In chapter three, the methodological approach used is discussed, including hypotheses, sampling, measures and data analysis. Chapter four includes the results and findings. A discussion of the

results and findings is found in chapter five. Lastly, chapter six includes a conclusion and limitations as well as a summary of the research findings and suggestions for future research.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. Introduction

This chapter provides a review of the existing literature on body image and exercise. The topic of body image will be introduced in the first part of the chapter. Existing literature and definitions of body image, body image satisfaction, and body image dissatisfaction will be explored as well as a discussion on contributing factors to body image evaluation. The second part of the chapter will explore literature on the lifestyle of average university students between the ages of 18 and 27 years so as to understand relations between student lifestyles and body image as well as their engagement in exercise. This leads to the next area of exploration: exercise. There will be a provision of the benefits of and barriers to exercise, as well as an examination of exercise habits and perceptions of exercise in both males and females. Lastly, there is an integration of body image and exercise that allows for the understanding of the kind of effect that exercise can have on body image perception.

2.2. Body Image

As mentioned in the introduction, body image has evolved dramatically over the years. For the purpose of this research, body image will be focused on as a multi-dimensional concept and from a cognitive-behavioural paradigm. During the early years of body image research, body image was conceptualised as a one-dimensional construct that only measured perception of the body; more recently it has been discussed as a multi-dimensional construct (Banfield & McCabe, 2002). Among other theorists (Agliata & Tantleff-Dunn, 2004; Brown & Mikulka, 1990; Gillen & Lefkowitz, 2006; Hubley & Quinlan, 2003; Monteath & McCabe, 1997. As cited in Cash & Smolak, 2011), Cash (2011) was one of the influential theorists who focused on the multi-dimensional aspects of body image. The current research has adopted Cash's conceptualisation and assessment of body image to understand and further explore this

construct. Cash's (2004) definition of body image explains that there are multiple facets to body image, including self-perceptions, self-attitudes, thoughts, beliefs, feelings, and behaviours toward the body. Similarly, the common understanding of body image is that it is an individual's internal representation, perception or attitude towards his/her outer appearance on a physiological, psychological and sociological level (Campbell & Hausenblas, 2009; Cash et al., 1997; Nolan & Surujlal, 2012). This includes the evaluation and perception of shape, size, function and capabilities of an individual (Cash et al., 1997; Veerman, 2013). Cash's multi-dimensional view of body image includes three dimensions of body image: body image evaluation, body image affect and body image investment (Muth & Cash, 1997). These dimensions will be discussed below.

Body image evaluation has been the prominent focus in research, and therefore the most understood (Cash, Melnyk, & Hrabosky, 2004). Body image evaluation encompasses the individual's evaluative thoughts around their physical appearance and their perceived satisfaction or dissatisfaction with their body (Muth & Cash, 1997). This includes both the cognitive and emotional evaluation of size, shape, and appearance (Buser & Parkins, 2013). The body image evaluation facet seems to play the biggest part in the formation of body image and has therefore received the most attention (Muth & Cash, 1997). It has been suggested that evaluation of the body cannot be made without establishing the feelings or emotions experienced towards the body (Muth & Cash, 1997). Body image evaluation thus depends greatly on perception and judgement of the body (Muth & Cash, 1997). This leads to the second facet, as described by Cash (2004).

The second facet, being body image affect, refers to the feelings or emotional experiences an individual has around their physical appearance when in specific contexts (Muth & Cash, 1997). Some individuals may experience either negative or positive emotions around their appearance when in particular social or familial groups that they may not experience in other

social environments. This may be due to comparison of oneself with others or the perceived or actual expectation of others. Once the individual has 'evaluated' their body and established the feelings they have towards their body, their behaviour and investment in their appearance will be made accordingly (Cash et al., 2004; Banfield & McCabe, 2002). This means that the emotion experienced around their body image will drive the level of investment made in their appearance.

The last facet of body image as described by Cash (2004) is cognitive behaviour investment. Cognitive behaviour investment refers to the appearance-related self-schemas or the amount of focus and priority the individual places on their appearance (Buser & Parkins, 2013; Cash et al., 2004; Cash et al., 2005; Muth & Cash, 1997). This encompasses the importance of an individual's appearance (Cash et al., 2004). A high priority is placed on appearance when a substantial amount of time and thought on exercise, dieting, and getting ready to go out are invested in appearance. The investment made in one's appearance may influence the satisfaction or dissatisfaction one has around their body. More investment in appearance reflects significant levels of body image dissatisfaction, perfectionistic tendencies, and low self-esteem (Cash et al., 2004). In contrast, less self-evaluative salience or body image investment reflects less dysfunctional patterns of thought around the body (Cash et al., 2004).

As shown above, body image is determined through these three facets of body image: evaluation, affect and investment. Each of these facets of body image contributes to the satisfaction or dissatisfaction an individual may experience around their body. Cash's inclusion of these behavioural aspects when conceptualising body image incorporates the cognitive importance placed on body image as well as the behaviours used to maintain appearance (Banfield & McCabe, 2002). This proposed cognitive-behavioural model of Cash is of the view that life events, thoughts and perceptions shape and perpetuate body image perception (Cash et

al., 2005). Each of these facets of body image as well as the individual's experiences contribute to the satisfaction or dissatisfaction an individual may experience with their body.

Body image satisfaction or dissatisfaction is formed by an individual's perception or assessment of their body (Cash et al., 1997). Body image satisfaction/dissatisfaction will determine the self-acceptance or rejection an individual has developed of their self and their appearance. The view or perception of their body can be distorted due to each individual's own expectations and critiques. How one appears to others and how one is viewed by others are other common concerns for most people (Cash et al., 2005). Therefore, it becomes important to some individuals to look acceptable to others and to the self because of the benefits gained from acceptable appearance (Morrison, Kalin, & Morrison, 2004). This describes the cognitions experienced when looking at body image investment, as explained earlier. These cognitions of acceptable appearance encourage the individual to invest more time in their appearance. Appearance affects many areas in an individual's life (Laughlin, 1997). One way in which appearance affects the individual is peer acceptance (Webb & Zimmer-Gembeck, 2012). Attracting a partner and being accepted by others is often connected to that individual's appearance. This pressure to find acceptance may influence an individual to either experience body satisfaction or body dissatisfaction (Koyuncu et al., 2010).

2.2.1. Body Image Satisfaction

Body image satisfaction refers to an individual's acceptance and happiness with their physical body, which is also known as a positive body image (Castonguaya, Gilchrist, Mack, & Sabiston, 2013). This acceptance and happiness with the body is explored through body image evaluation and body image investment, as proposed by Cash (2004). Satisfaction with the body is usually linked to the happiness an individual has with his/her size or weight (Cusack, 2000). This satisfaction or happiness related to the body and size suggests that the body does not need to be altered through efforts such as diet and exercise (Buser & Parkins, 2013). It is

here where the impact of the concept of body image investment, as proposed by Cash, is evident; the individual may choose to invest less time on their appearance. Body satisfaction and a positive perception of the self influence many aspects of the individual's life and may lead to increased life satisfaction (Cusack, 2000). Those individuals that experience body satisfaction or have a positive body image appear more confident and have higher levels of self-esteem (Cusack, 2000; Edwards et al., 2005; Krishen & Worthen, 2011). There is a significant link between body image satisfaction and self-esteem (Kiang & Harter, 2006; Krishen & Worthen, 2011); this will be discussed later in the dissertation.

Not only does body image satisfaction affect the individual intrapersonally (in relation to themselves), but it can also affect them interpersonally (Devaraj & Lewis, 2010; Holsen, Jones, & Birkelanda, 2012; Koyuncu et al., 2010; Nolan & Surujlal, 2012). It is important to note that the individual's experience of their body, be it negative or positive, can also be affected by interactions with others (Holsen et al., 2012). The satisfaction with appearance may make the individual feel more comfortable with interpersonal interactions which may lead to the concern of what others may think. Thus the value that individuals place on perceptions of other people in an individual's life may influence one's body image (Holsen et al., 2012; Leone et al., 2011). For example, the individual may find their friend's perception of their body to be positive, thereby improving their own perception of their body. This may also be the case in romantic relationships (Nolan & Surujlal, 2012). There may be instances where the partner's perception is in line with that of the individual and then there may be other cases where they do not align (Nolan & Surujlal, 2012). It is possible for the individual and their partner to have different perceptions of what is attractive (Nolan & Surujlal, 2012). Should these perceptions be similar, acceptance will lie in fulfilling these ideals. Should these ideals not align or each partner's perception is dissimilar, expectations are less likely to be fulfilled. These unmet expectations or perceptions of attractiveness may have an influence on the individual's body satisfaction.

Often an individual will experience body image satisfaction with what they perceive to be pleasing to their intended partner (Nolan & Surujlal, 2012). Although this is often an overestimation, this idea of what their partner perceives to be attractive may influence the individual to alter their body accordingly in order to gain acceptance from their partner. In heteronormative couples, women may perceive that men desire a small waist and large chest, as this is portrayed as desirable (Nolan & Surujlal, 2012). On the other hand, men perceive women to desire stronger, more muscular partners (Nolan & Surujlal, 2012). When the individual physically matches what they perceive to be desired, they are more likely to experience happiness with their bodies, therefore experiencing body image satisfaction (Nolan & Surujlal, 2012). Individuals who do not experience satisfaction with their bodies are likely to experience body image dissatisfaction.

2.2.2. Body Image Dissatisfaction

Body image can be negatively affected by certain events or situations that an individual may encounter (Cash et al., 2005). These events may cause the individual to feel unhappy or dissatisfied with their physical appearance (Cash et al., 2005). From this experience body image dissatisfaction may develop. Body image dissatisfaction indicates that there is a difference between an individual's perception of their appearance and that of their ideal appearance, causing the individual to be displeased with their appearance (Buser & Parkins, 2013; Mwaba & Roman, 2009). Negative thoughts around one's body are also included in body image dissatisfaction (Markula, 2007). Unhappiness with appearance and physical self could potentially lead to body dissatisfaction and other psychological and social issues (Furnham, Badmin, & Sneade, 2002; Latner, Knight, & Illingworth, 2011); a few of these disruptive issues being depression, low self-esteem, and lack of confidence (Buser & Parkins, 2013). It can also be said that dissatisfaction with the body or negative body image has a physical, psychological and economic impact on an individual (Campbell & Hausenblas, 2009). Campbell and

Hausenblas (2009) specifically speak of emotional distress, smoking, altering of appearance, steroid use, social anxiety, impaired sexual functioning, depression, and eating disorders. Body image dissatisfaction can cause a poor body image and low self-esteem, which may escalate into unhealthy behavioural practices such as disordered eating as mentioned above, and over-exercising (Furnham, Badmin, & Sneade, 2002; Krishen & Worthen, 2011). Others may spend large amounts of money and time on surgeries to 'fix' their bodies, thinking that this is the way to become satisfied with their physical appearance (Campbell & Hausenblas, 2009).

Body image dissatisfaction has been associated with depression, guilt, shame, and decreased happiness and confidence (Basset & Martin Ginis, 2011; Buser & Parkins, 2013). Unhappiness with one's appearance is likely to increase the chance of emotional distress and psychological impairment (Cash, Phillips, Santos, & Hrabosky, 2004; Latner et al., 2011), which ranges from minimal to extreme in different cases (Cash et al., 2004). Each individual that experiences body image dissatisfaction will be impacted by this dissatisfaction, at different degrees and in different ways throughout their various developmental phases of life.

Developmentally, adolescence and young adulthood is a period of change and growth (Silveira Vieira, Dal Bosco, Quevedo Grave, & Scherer Adami, 2015). Part of this developmental period includes physical, psychological, cognitive, hormonal, and social growth that leads the individual to adulthood (Silveira Vieira et al., 2015). This period may spark critical thinking about multiple aspects of themselves, especially when trying to find their place in society and develop their identity (Tiunova, 2015; Verstuyf, Van Petegem, Vansteenkiste, Soenens, & Boone, 2014). Constructing a solid and stable identity becomes the focal point of this developmental period (Verstuyf et al., 2014). Constant wrestling with themselves to find out who they are and where they fit in fosters critical thinking and assessment of themselves, their bodies, and their role. Due to the critical nature of the adolescent/young adulthood developmental period, body image dissatisfaction is most commonly experienced during this

period (Mwaba & Roman, 2009; Silliman, Rodas-Fortier, & Neyman, 2004; Veerman, 2013). Critical thinking about the self and the way in which the self is perceived extends into adulthood for most women, as most women are more likely to be judgmental of their appearance (Veerman, 2013).

Women, being more evaluative of their appearance than men, may develop a distorted view of their bodies (Muth & Cash, 1997). Negative evaluation of the body is likely to lead to body image dissatisfaction. Women who experience body image dissatisfaction are more likely to view themselves as being overweight and unappealing even when they are of average size (Muth & Cash, 1997). This infers that they may experience negative body image evaluation and affect as per Cash's model (2004). More than half of women experience body image dissatisfaction and may continue to experience it throughout their adult life (Buser & Parkins, 2013; Krishen & Worthen, 2011). In fact, body image dissatisfaction has become a normative struggle that women living in today's society experience (Devaraj & Lewis, 2010; Kostanski, Fisher, & Gullone, 2004). This struggle with body image dissatisfaction also applies to female students.

Research conducted in the early 2000s concluded that female university students are generally dissatisfied with their bodies and aim to lose weight (Silliman, Rodas-Fortier, & Neyman, 2004; Furnham et al., 2002). These students tend to diet more, exercise more and take weight-loss pills more than students who are satisfied with their bodies (Nolan & Surujlal, 2012). Contrary to previous research where body image dissatisfaction was high in female students, Mwaba and Roman (2009) produced results that suggest low levels of body dissatisfaction in a sample of Black South African female students. This suggests that different cultures and social groups experience body image satisfaction/dissatisfaction in different ways. Although body image dissatisfaction is most commonly found in women, body image

dissatisfaction experienced by men is becoming more common, especially in male university students (Krishen & Worthen, 2011; McCabe & Ricciardelli, 2004).

Some male university students experience body image dissatisfaction due to being overweight and wanting to lose the weight, while others through being underweight and wanting to gain muscle mass (McCabe & Ricciardelli, 2004). This form of body image dissatisfaction seems to be more prevalent in males (Kostanski, Fisher, & Gullone, 2004). Generally, male students experiencing body image dissatisfaction place emphasis on their health and fitness (physiology and functioning), and not as much on physical appearance (Melching, Green, & O'Neal, 2016; Nolan & Surujlal, 2012). The social construction of what is perceived as attractive impacts the individuals body image. This further demonstrates the cultural and social impact on body image.

2.2.3. Body Image across Cultures and Social Comparison

The view that others have of an individual's body plays a large role in affecting the individual's own perception of their body image. The individual's perception of the body is often influenced by what their peers think. Different cultures have different expectations around a healthy body image and what is acceptable. This view, perpetuated by the individual's culture and those around them, will influence their internal view of their own body. Socialisation processes may positively or negatively influence thinking around an individual's body, specifically the negative thinking found in females (Kostanski et al., 2004).

In most cultures and societies, females who have a slender body and males who have a muscular body are regarded as attractive (Furnham et al., 2002; Markula, 2007; Veerman, 2013). Ideally, in accordance with what society depicts as attractive, men should have a v-shape figure with muscular biceps, chest and shoulders (Basset & Martin Ginis, 2011; Furnham et al., 2002). Generally, men are judged on their performance and a muscular body, which is usually associated with the more masculine gender identity that society expects (Krishen & Worthen,

2011; Womack, 2010). Women are expected to be slender with slim hips, bottom, and thighs, with judgement placed mainly on their appearance rather than their performance (Furnham et al., 2002; Krishen & Worthen, 2011). The internalisation of these societal expectations has been said to increase the likelihood of body image dissatisfaction (Vartanian & Novak, 2011). Maintaining these socio-cultural norms lead women to place more importance and attention on their physical appearance; women are therefore more "cognitively and behaviourally invested in their appearance" (Muth & Cash, 1997, p. 1439). These socio-cultural norms cause the individual to feel as though they need to lose weight in order to be accepted (Kostanski et al., 2004; Pila, Barlow, & Wrosch, 2016). Individuals who are perceived as attractive are viewed as being more likely to succeed vocationally, personally and socially (Cusack, 2000). This perception places more pressure on the individual to be culturally and socially attractive.

Traditionally in South Africa, it is accepted that larger figures are preferred, as thinner figures are considered to be indicative of ill-health (Harter, 2011). In a country where HIV and AIDS are pandemic, most individuals tend to prefer healthier looking bodies (Harter, 2011). This preference for a larger, healthier figure could explain why Mwaba and Roman (2009) found results describing low levels of body image dissatisfaction in Black female students. Culturally, the Black female ideal figure is not concurrent with that of the Western world. Although larger-sized bodies are perceived as more desirable within the African culture, the number of South African women that value the global perception of an 'attractive figure' is ever increasing (Mwaba & Roman, 2009). However, very few individuals are born with this specific figure (Markula, 2007). Not adhering to this ideal may cause great distress within the individual. It could be argued that this perception of a slender or muscular body being attractive has pathologised the sense of what a healthy body is. The *pathologised*, attractive figure has become the norm and reference point for most individuals (Nolan & Surujlal, 2012). This perception of what is attractive has placed increased pressure on individuals to conform. Some

women believe that in order to be viewed in a positive way they need to have a slender body that fits in with the Western cultural and even pathologised norm. While some individuals strive to achieve this desired level of 'thinness', other individuals are not able to meet the pathologised norm. Not being able to fit into this norm has a significant effect on an individual's self-esteem and body image (Borkoles, Polman, & Levy, 2010; Koyuncu et al., 2010). For the individual, conforming to this norm suggests acceptance by others and thereby acceptance of themselves (Tylka & Wood-Barcalow, 2015). A lack of acceptance may further exacerbate negative internal feelings and body image dissatisfaction (Borkoles et al., 2010).

The media also plays a significant role in creating these 'acceptable' body types, causing body dissatisfaction, problematic eating habits and unhealthy exercise behaviour (Buser & Parkins, 2013; Furnham et al., 2002; Sides-Moore & Tochkov, 2011). The slim body that the media portrays as acceptable may become internalised by the individual who may seek this body through persistent efforts, making this ideal their goal (Buser & Parkins, 2013). What the media portrays influences the individual's perceptions of their physical and psychosocial environment and may cause permanent psychological damage (Leone et al., 2011). The pressure to conform to these ideals may encourage the individual to make changes to their physical appearance, and some of these changes may have long term consequences (Leone et al., 2011). Consequences can include developing a low self-esteem and poor self-worth when they are not able to make these changes. Other consequences may include developing eating disorders or body dysmorphia. More severe physical consequences include complications from botched cosmetic surgeries. External pressure from family and peers may also reinforce the expectation of the societal ideal, increasing the longing to have this desired figure (Krishen & Worthen, 2011).

Body image dissatisfaction can also be a learned behaviour through social interaction. Social interaction with others who constantly complain about their appearance is likely to affect

body image perceptions (Devaraj & Lewis, 2010). Family members and peers that tease individuals about their appearance may also influence the body image satisfaction or dissatisfaction of that individual (Devaraj & Lewis, 2010). This is especially true if it occurs during the changes one experiences while still growing, such as weight gain, skin problems and puberty (Devaraj & Lewis, 2010). During the developmental period most university students are in, it is commonly found that there is an increased concern around peer acceptance and intimacy (Webb & Zimmer-Gembeck, 2012). Moreover, during this time a large amount of time is spent on discussing the body and focusing on the body, specifically the promotion of body uniformity. Exposure to others' dissatisfaction with their own bodies is likely to be internalised by the individual and cause the development of their own body dissatisfaction (Webb & Zimmer-Gembeck, 2012). Body image satisfaction may not only be influenced by social learning, but may also be influenced by social comparison.

According to theories such as the social comparison theory and the self-objectification theory, there is a natural and evolutionary need for self-evaluation (Koyuncu et al., 2010). This is done through comparing the self to others who have similar characteristics, such as age, ethnicity and appearance, and constantly judging the self according to this comparison (Koyuncu et al., 2010; Nolan & Surujlal, 2012; Pila et al., 2016; Webb & Zimmer-Gembeck, 2012). Festinger (1954) understands this self-comparison as an inherent need to understand how different or similar the individual is in relation to others, in order to gain knowledge on how to improve (Corcoran, Crusius & Mussweiler, 2011). This comparison to others within the same culture may lead to being overly critical of the body, causing the individual to conform to what is socially acceptable (Nolan & Surujlal, 2012). Upon comparison with others, not matching the perceived ideal can cause an increase in anxiety related to the body (Koyuncu et al., 2010).This body-related anxiety not only refers to evaluations of one's own body, but also to the concern that others may be negatively evaluating their body (Koyuncu et al., 2010). By

integrating negative evaluations from the self and others, a lower self-worth may develop (Harter, Waters, & Whitesell, 1998).

2.2.4. The Relational Self-Worth Model

Related to the social comparison theory, the relational self-worth model also considers self-evaluation. The relational self-worth model accounts for individuals evaluating their self-worth, or overall satisfaction with the self, differently in different relational contexts (Harter et al., 1998). This could be in the home with family, among classmates, and among members of the opposite sex. Different interpersonal situations may evoke different feelings of self-worth; for example, the individual may experience more positive feelings about the self or feel more satisfied with the self in some relationships and less so in other relationships (Harter et al., 1998). Each individual may describe each version of their self in different ways, depending on the role they are expected to play in that context (Harter et al., 1998). The opinions and evaluations that others have made of them, especially if from a significant other, influence the individual's original self-evaluation, which could be internalised and result in "relationship-specific attitudes about one's worth as a person", also known as self-worth (Harter et al., 1998, p. 757). The approval or disapproval that others express becomes incorporated in the individual's evaluation of their self-worth. Some individuals require positive evaluations from others in order to value their own worth; others believe that their own evaluation is what matters and that if they like themselves, others will too (Harter et al., 1998).

The model suggests that this differentiation in self-worth accelerates during adolescence. The individual's perspective-taking abilities and interpersonal understanding develops during this phase (Harter et al., 1998). When students first enter university, they experience fluctuations across various situations (physical, emotional and environmental), and differences in self-worth simultaneously emerge (Harter et al., 1998). Due to the demands of different social contexts and interpersonal relationships, multiple selves may develop in order to function

in each of these situations (Harter et al., 1998). During this developmental stage, the individual is searching for autonomy; through the relational self-worth model the individual seeks for approval from those outside of their usual circles, such as adults and peers from external circles representing the general public. This approval seems to hold more weight than from those who are close to the individual (Harter et al., 1998). It is therefore normative for the adolescent or emerging adult to have unhealthy weight and body image concerns (Kiang & Harter, 2006). Self-worth is closely related to self-esteem (Harter et al., 1998); therefore self-esteem is likely to be affected by concerns with the body (Krishen & Worthen, 2011).

2.2.5. Body Image and Self-esteem

A strong correlation can be found between an individual's self-esteem and their body image (Kiang & Harter, 2006; Krishen & Worthen, 2011). Self-esteem and confidence is said to influence the perception of the body (Leone et al., 2011). When referring to self-esteem, it can be described as the measure or evaluation of an individual's feelings, satisfaction, respect, and confidence in the self (Edwards et al., 2005). Self-esteem can therefore determine the satisfaction or dissatisfaction one has with their physical appearance (Nolan & Surujlal, 2012). While self-esteem plays a role in maintaining body image, body image also plays a role in maintaining self-esteem; thus making it a reciprocal relationship (Koyuncu et al., 2010). Those individuals experiencing low self-esteem are more likely to experience body image dissatisfaction. Constant self-evaluation due to the anxiety felt about the way they are perceived by others, as discussed in the relational self-worth model and social comparison theory, may result in the individual placing a large focus on their appearance and maintaining ideal standards, and influence their self-esteem (Devaraj & Lewis, 2010).

A positive body image or body image satisfaction is often positively correlated to self-esteem (Krishen & Worthen, 2011). The opposite is also true; women struggling with low self-esteem may also struggle with body image dissatisfaction (Devaraj & Lewis, 2010; Furnham

et al., 2002). Individuals experiencing body image dissatisfaction may experience negative thoughts about themselves, believing that they are inadequate or less capable of success (Cusack, 2000). It is more common for women to experience low self-esteem than men; this lack of self-esteem may increase unhealthy practices around dieting, body image and exercise (Krishen & Worthen, 2011). However, there is another factor involved in maintaining healthy practices: that of stress.

2.2.6. Body Image and Stress

It has been suggested that stress plays a role in how an individual evaluates their body image. The presence of stress in an individual's life is likely to affect the body and may distort their thinking around themselves and their bodies. It has been reported that individuals who experience stress or low mood may be predisposed to forming body image dissatisfaction (Devaraj & Lewis, 2010). Another study (Murray, Rieger, & Byrne, 2013) documents a strong correlation between stress and the dissatisfaction of body image.

Stress can also lead to unhealthy eating and dieting, which may additionally affect the perception of body image. Further exploration of the relationship between body image and stress needs to be conducted in order to fully understand the implications (Murray et al., 2013). The distorted thinking accompanied by stress is likely to affect the perception of the self and in turn the level of self-esteem or self-worth experienced. Stress and concerns about self-worth or self-esteem are experienced by a number of university students (Edwards et al., 2005; Soyeur, Unalan, & Elmali, 2010); these concerns all have a link to body image, as argued so far. Therefore, as this study is focusing on students, exploration of body image as experienced by students is important.

2.2.7. Body Image in Students

In terms of the general developmental progression from school to university, students entering university are usually progressing from adolescence to young adulthood, and are most

commonly between the ages of 18 and 21 years old at the start of their studies (Soyeur et al., 2010). During adolescence and young adulthood, thoughts and beliefs around body image start to develop (Kostanski et al., 2004; Nolan & Surujlal, 2012). This focused attention placed on the body and its appearance may result in body image dissatisfaction, which is found to be very common during adolescence and young adulthood (Mwaba & Roman, 2009). Previous research based in Western culture found that 38 % of male students were satisfied with their bodies as compared to 16 % of female students (Silliman et al., 2004). These findings indicate that the general bodily perceptions of students are negative as opposed to positive or satisfactory. The reason for body dissatisfaction during this developmental period could be due to young adults being vulnerable to the pressure that society and their peers place on physical appearance (Nolan & Surujlal, 2012). During this developmental period, body image becomes the focus of social interaction (Nolan & Surujlal, 2012). The pressure experienced by a student to be attractive may lead them to become overly critical of their body, leading to body dissatisfaction (Nolan & Surujlal, 2012).

In a South African study, Peltzer and Pengpid (2012) found that the degree of body image satisfaction was higher in young people who are physically active than in those who are inactive. This proves that exercise has an influence on body image satisfaction; which results in a corresponding decrease in body image dissatisfaction (Krishen & Worthen, 2011). Self-acceptance of an individual's body and a positive self-perception improves quality of life, thereby allowing the student to focus on his/her academic performance and goals for the future (Nolan & Surujlal, 2012).

Female students have been identified as more likely to experience poor body image and eating behaviours (Smith & Davenport, 2012). In fact, earlier research (Celio et al., 2006; Levitt, 2004; Rozin, Bauer, & Cantanese, 2003) has shown that it is the norm that female students experience body image dissatisfaction and weight concerns while on campus (Smith

& Davenport, 2012). More recent studies have also confirmed this idea of body image dissatisfaction being common among students (Gitau, Micklesfield, Pettifor, & Norris, 2014; Gitau, Micklesfield, Pettifor, & Norris, 2014), resulting in them commonly using diet aids in order to control their weight; especially since the food available on campus is usually high in calories and students generally have unhealthy eating patterns due to class schedules (Smith & Davenport, 2012). Students with full class schedules may experience an increase in stress as well. It can be said that these factors require some adjustment in the students' lifestyle, thus, the student lifestyle will now be discussed.

2.3. Student Lifestyle

The transition from high school to university has been an important topic in research regarding young adulthood, especially when predicting future adult behaviours regarding health and lifestyle (Soyeur et al., 2010; Tumusiime & Frantz, 2006). Generally most students enter university directly after high school at the age of 18 or 19 years old (Soyeur et al., 2010). When these young adults enter into the university environment, they are faced with new challenges and responsibilities. Change, ambiguity and adjustment are evident in most areas of their lives at this point (Tumusiime & Frantz, 2006). Students are faced with change in social, physical, emotional and cultural aspects (Tumusiime & Frantz, 2006). Changes may include increase in work load, stress levels, support networks and financial pressure (Janse van Rensburg & Surujlal, 2013).

The additional changes in social groups and interaction also have the ability to influence body image. In fact, this social change that the student experiences may have a stronger influence on body image than previously thought (Leone et al., 2011). Since the amount of social interaction that takes place has declined, social isolation has increased (Leone et al., 2011). The majority of free time students have, is spent on cell phones, electronic mail, internet, and watching TV (Leone et al., 2011). This social isolation and the influence of technology

may increase negative body perceptions (Leone et al., 2011). Interaction with fewer friends has been moderately correlated to body image dissatisfaction (Leone et al., 2011). Less social interaction leads to less satisfaction with appearance (Leone et al., 2011).

During this adjustment to the new environment, students are required to make independent decisions regarding their health, diet and physical activity (Nolan & Surujlal, 2012; Soyeur et al., 2010). Physical activity is influenced by the emotional, social and cultural changes that the student experiences (Tumusiime & Frantz, 2006). Due to the change in environment, most students engage in more sedentary activities than physical activities (Tumusiime & Frantz, 2006). The pressure and stress created by university life may cause students to put their body last (Soyeur et al, 2010). Pressure to focus on assignments and study for exams may leave little room for students to engage in physical activity. A lack of physical activity can contribute to unhealthy behaviour.

2.3.1. Unhealthy Behaviour

It is common for university students to neglect their health and engage in unhealthy behaviours (Janse van Rensburg & Surujlal, 2013). These unhealthy behaviours could include engaging in substance use, physical inactivity and unhealthy eating habits (Nolan & Surujlal, 2012; Peltzer & Pengpid, 2012; Takomana & Kalimbira, 2012). As a result of not being able to cope with the stress placed on them, they may take up unhealthy practices like smoking, excessive eating and drinking, and lack of eating (Janse van Rensburg & Surujlal, 2013). Students often face pressure to conform to society's acceptable behaviours; this often includes the use of intoxicating substances (Janse van Rensburg & Surujlal, 2013).

Eating behaviours are also influenced by their peers (Janse van Rensburg & Surujlal, 2013). The university student's diet often consists of cheap, unhealthy foods, as eating healthily requires preparation time as well as high costs (Nolan & Surujlal, 2012). High intakes of fat, sodium, and sugar, combined with low intake of fruit and vegetables, are common (Silliman et

al., 2004). These choices are often made due to the availability and accessibility of fast food on campus (Janse van Rensburg & Surujlal, 2013).These unhealthy, high-calorie diets, and in some cases energy supplements in conjunction therewith, is likely to cause weight gain, especially when not combined with physical exercise (Takomana & Kalimbira, 2012). If not addressed these unhealthy practices are likely to continue into adulthood (Janse van Rensburg & Surujlal, 2013; Takomana & Kalimbira, 2012). Eating behaviours will not be a focus point in this dissertation, but it is something to be mindful of when considering body image and exercise participation.

Due to a number of these factors, it is common for students to gain a significant amount of weight in their first year of university (Lovell, Ansari, & Parker, 2010). This weight gain could lead to becoming overweight, which has become a major problem in South Africa (Peltzer & Pengpid, 2012). It has been found that 30.7 % of South African women and 11.5 % of South African men between the ages of 15 and 24 years are overweight (Peltzer & Pengpid, 2012). Body dissatisfaction is therefore more prevalent in these overweight, young adults (Peltzer & Pengpid, 2012). The more these young adults experience body dissatisfaction, the more likely it is for them to neglect their bodies (Nolan & Surujlal, 2012; Peltzer & Pengpid, 2012).

On the other hand, students may use dieting as a way to manage their body shape. This is more commonly found in females than in males, and the reason for dieting may change with age (Furnham et al., 2002). A large majority of female students have some kind of eating disorder, previous research indicates that 64% of university aged females experience some form of an eating disorder (Kiang & Harter, 2006). These students may start to eat less than their bodies require, or may eat the wrong types of foods. Some students may start the use of dietary supplements, such as pills, laxatives, and/or fat blockers, to lose or control weight (Smith & Davenport, 2012). These actions may lead to neglecting the health needs of their body. Since

physical appearance is of high importance during this developmental period, the student may go to great lengths in order to maintain an “attractive figure”. Some students may even engage in the overuse of exercise to manage their weight. Although this may result in the attractive body desired, a combination of over-exercising and not meeting nutritional needs is likely to affect the student’s appearance as well as their health (Furnham et al., 2002; Nolan & Surujlal, 2012).

2.3.2. Lack of Exercise in Students

In contrast to this is it also recognized that some students do not exercise. Student lack of engaging in exercise is not a new discovery. Previous investigations, including the studies mentioned below, have given evidence of this. In 1995, it was found that 46 % of university students were inactive, while 35 % were active. The number of active students increased in a study by Dinger and Waugandt (1997) to 45 %, however Haberman and Luffey (1998) later found that 39 % of their sample was active (Silliman et al., 2004). In a study conducted in Africa, more than 70 % of the sample was not actively engaging in physical exercise (Tumusiime & Frantz, 2006). Previous research (Grubbs & Carter, 2002) found that undergraduate students exercised mainly for health/fitness management and appearance/weight management (Grubbs & Carter, 2002).

The participation of students in exercise has significantly decreased (Janse van Rensburg & Surujlal, 2013). In the South African Youth Risk Survey of 2008, which measures the incidence of behaviours that may result in the secondary school learner being at risk for disease and ill health (Reddy et al., 2010), it was found that 42 % of youths are not adequately active. Forty six point two per cent of females and 36.7 % of males were found to be inactive (Reddy et al., 2010). The amount of inactive youths has increased since the previous survey of 2002, which stated that 37.5 % of South African youths were not adequately active (Reddy et al., 2010). There is roughly a 30 % decline in physical activity in individuals from the time they

are 12 years old to the time they are 21 years old (Weinberg & Gould, 2007). In fact, this decline during adolescence and young adulthood is the highest rate of decline in physical exercise that the individual will experience during their lifetime (Grubbs & Carter, 2002). The decline in physical activity could be due to students being engrossed in technology in most aspects of their lives, including computers, cell phones, iPods, and television (Janse van Rensburg & Surujlal, 2013). Those students involved in classes with heavy workloads may not have the time to exercise, as their energy and attention is placed elsewhere. Although some students may have more time to engage in physical activity/exercise, they may lack the internal motivation needed to do so (Gatab & Pirhayti, 2012). Homan and Tylka (2014) contradict the belief that students do little exercise, and state that students are given multiple opportunities in college to exercise at the college gymnasium, sports clubs and sports teams.

Regular exercise has been proven to increase happiness and improve health in students (Gatab & Pirhayti, 2012). When students do not engage in physical exercise, they are neglecting their bodies' need for physical activity (Castonguaya et al., 2013; Takomana & Kalimbira, 2012).

2.3.3. Promotion of Exercise in Students

Most students do believe that physical exercise provides positive health benefits (Lovell, Ansari, & Parker, 2010). Therefore, encouraging the practice of physical activity and making the facilities or exercise plans available should be an important effort in universities. Information regarding the health benefits of regular physical exercise should be made available to students in order to encourage them to become involved. Engaging in regular physical activity during university years is said to extend up to five years after university (Lovell et al., 2010). Therefore, it would be ideal to promote a healthy and positive outlook regarding physical exercise in students attending university while encouraging the consistent practice of exercise (Lovell et al., 2010). Providing students with information and knowledge about the benefits of

exercise may encourage them to become actively involved in regular physical exercise (Lovell et al., 2010). If students lose interest in engaging in physical exercise, their perceptions of exercise may become negative, causing further lack of exercise (Lovell et al., 2010). Individuals will be more likely to engage in exercise interventions if they believe the benefits of the intervention outweigh the difficulties or barriers (Lovell et al., 2010).

2.4. Exercise

The physiological benefits of exercise as well as the psychological effects on an individual's well-being have been well researched (Harne & Bixby, 2005; Krishen & Worthen, 2011; Lovell et al., 2010; Withall et al., 2011). More specifically, exercise plays a role in improving the mental well-being of individuals, which includes their body image (Gatab & Pirhayti, 2012). Exercise therefore influences body image and self-esteem. Self-esteem will increase with the implementation of a healthy lifestyle. When self-esteem is improved, body image satisfaction will also improve, as they are linked to each other. Consequently, a positive self-image will therefore increase healthy lifestyle practices (Krishen & Worthen, 2011). Exercise is a salient construct in forming and improving body image (Markula, 2007).

For the purpose of this research, a combination of definitions from previous research will be used to define exercise. This research will define exercise as one or more planned physical activities that require the use of energy aimed at improving an individual's health (Edwards, 2006; Edwards et al., 2005; Nolan et al., 2011), more specifically aerobic and anaerobic exercise. Engaging in exercise on a regular basis will enhance the benefits experienced. Regular exercise is said to be planned physical activity that lasts a minimum of 20-30 minutes, at least three times a week (Myers & Roth, 1997; Edwards, 2003).

Since exercise is a key construct in forming body image, it is important to understand the different types of exercise and what it is that encourages people to exercise, as well as what

keeps them from exercising. The type of exercise engaged in may determine the extent of the positive influence on body image (Harne & Bixby, 2005; Leone et al., 2011).

2.4.1. Types of Exercise

It is important to note the difference between sport and exercise, as this research will focus mainly on exercise. Sport is understood as organised, competitive physical activity; and exercise is understood as physical activity that is planned, structured, and usually non-competitive in nature (Caspersen, 1985). There have been conflicting results when correlating body image satisfaction and participation in sport. It has been reported that the type of sport or exercise participated in will predict the satisfaction or dissatisfaction with body image (Leone et al., 2011). To illustrate, conflicting results were found in Huddy and Cash's (1997) study, where increased body image satisfaction was found in marathon runners compared to less satisfaction found in distance running and crew participants.

There are two main types of exercise which an individual can engage in: aerobic and anaerobic exercise. Aerobic exercise, or cardio-based exercise, increases fitness levels and maintains body mass (Borkoles et al., 2010; Hausenblas & Fallon, 2006), while also increasing the speed at which an individual will recover from psychosocial stress (Edwards, 2006). Weight training or anaerobic exercise increases muscle tone (Borkoles et al., 2010). Weight training is not only for men, as commonly perceived; young women may also benefit from strength training exercises. Benefits such as improvements in self-esteem, self-concept, emotional well-being, and body image have been recorded in connection with weight training (Harne & Bixby, 2005). Engaging in both aerobic and anaerobic exercise together will have a greater impact on body image (Hausenblas & Fallon, 2006).

Another form of exercise is mind-body exercise. Body image can also be improved through mind-body exercise such as yoga (Boudette, 2006). Mind-body exercise focuses on the

connection between the emotional self and the physical self, aiming to bring balance between the two (Boudette, 2006).

2.4.2. The Reasons to and Benefits of Exercise

There are a variety of documented reasons and benefits to engage in exercise. Exercise can have social, psychological, performance and physical benefits (Edwards et al., 2005; Gatab & Pirhayti, 2012; Nolan et al., 2011). The social, psychological, performance and physical benefits of exercise are discussed below.

Social benefits experienced from exercise include social interaction with friends and others, allowing the individual to develop the skills required to engage with others in an appropriate way (Nolan et al., 2011). It also offers the opportunity for individuals to meet new people. Thus, social development and human interaction increases through exercise. This reduces social anxiety and improves social comfort. Engaging in physical exercise or team sports increases chances of developing a competitive spirit as well as the etiquette of competition (Gatab & Pirhayti, 2012). Exercise can also be a source of fun and enjoyment for the individual, creating an opportunity to increase life satisfaction and happiness (Nolan et al., 2011).

It has been found that those who exercise also gain psychological benefits. Those who exercise are more psychologically fit and more satisfied with their lives than those who do not engage in exercise (Edwards, 2006; Nolan et al., 2011). The documented psychological benefits gained from exercise are vast. Nolan, Sadaba and Surujal's (2011) study on South African university students, through the use of the Exercise Benefits/Barriers Scale (EBBS), reported that stress-relief and positive outlook on life were the main benefits. When engaging in exercise an individual can expect to feel good about themselves, increasing their pride, body image, self-esteem and self-efficacy (Nolan et al., 2011). Brudzynski and Ebben (2010) found that 58 % of a sample of university students reported that the number of training hours was influenced by

their perceived body image. Exercise is useful in reducing anxiety, stress and depression, and increasing mood and calmness (Nolan et al., 2011). Exercise is often used as a coping mechanism to decrease worry, aggression, frustration and anger (Nolan et al., 2011).

As the psychological benefits occur, the student may notice improvements in their daily performance. As mentioned above, exercise also gives the individual performance benefits. Improvements may be seen in academic performance, intellectual functioning, perception and work efficacy. Students who take part in regular exercise may also experience increased ability for assertiveness and gravitate towards an internal locus of control (Edwards et al., 2005; Gatab & Pirhayti, 2012). An increased sense of achievement and discipline can be felt (Nolan et al., 2011). Exercise can also have cognitive gains. Common cognitive benefits include clearing the mind, increase in concentration, improved memory and an increase in brain functioning. The most common benefits found by Grubbs and Carter (2002), through the use of the EBBS, were performance and appearance. The benefits found in exercise also extend externally to the physical exterior.

Physical benefits of exercise include feeling refreshed, a boost in energy, fatigue reduction, increased fitness and strength as well as better sleeping patterns. Increased fitness and strength will improve one's performance, endurance, agility and reflexes (Nolan et al., 2011). Engaging in exercise for at least 20 minutes three times a week will also improve cardiovascular functioning (Edwards, 2006).

In considering reasons to exercise, many women, especially young adult females, choose exercise as a means of managing their dissatisfaction with their physical appearance (Veerman, 2013; Womack, 2010). Females will use exercise for weight control, toning and psychological benefits, more so than males who choose to exercise for muscle gain (Furnham et al., 2002; Silliman et al., 2004). Exercise may be an effective means of combating body dissatisfaction, because it raises self-esteem, which in turn improves body image satisfaction (Krishen &

Worthen, 2011). Women that exercise for weight control or appearance tend to have body image dissatisfaction and lower self-esteem (Furnham et al., 2002; Koyuncu et al., 2010). Homan and Tylka (2014) report that the benefit of appearance as a motivator to exercise is a moderating factor in the relationship between exercise and body image. They found that women who exercise more frequently are more satisfied and appreciative of their bodies, however if the motivator to exercise was based on appearance benefits, the strength of the relationship was weakened.

More specifically, in relation to the current study's sample of male and female students, the most commonly stated benefits of exercise are: stress reduction, improvements in self-esteem, increase in energy and strength, and fitness (Tumusiime & Frantz, 2006). Another study found that students exercise because they believe that exercise increases their fitness, the way that their body looks, their muscle tone and strength, and that it gives them a sense of personal accomplishment. Increase in fitness was the top reason for engaging in exercise (Grubbs & Carter, 2002). Consistent with this, van Niekerk (2010) found that the most important reason to exercise is physical health, desire for confident appearance and the individual's mental health (Van Niekerk, 2010). In a more recent study conducted on university students in the UK, physical performance was rated as the highest benefit of exercise with life enhancement closely behind (Lovell et al., 2010).

2.4.3. Barriers to Exercise

Although exercise has various psychological and physical benefits, some individuals do not exercise due to certain barriers (Lovell et al., 2010; Nolan et al., 2011). As previously mentioned, barriers can include physical, psychological, environmental or social problems. The most common barriers reported include: time, financial costs, exercising alone, displeasure or self-doubt, body image dissatisfaction, childcare difficulty, fatigue, and work commitments (Rasinaho et al., 2006; Withall et al., 2011). These barriers keep many individuals from

exercising, despite the fact that exercise may improve these problem areas. Specifically, body image has been found to be improved through regular exercise (Campbell & Hausenblas, 2009). Although previous research has stated that perceived barriers are what keep individuals from exercising, more recent research has suggested that the ratio of perceived barriers to benefits is what determines engagement in physical exercise (Lovell et al., 2010). This means that individuals are more likely to engage in exercise if they perceive the benefits of exercise to outweigh the barriers of exercise.

Another barrier is safety. Safety while exercising as well as going to and from exercising environments has been a concern, resulting in individuals not engaging in exercise (Nolan et al., 2011). Within a South African context where crime is high, fear of safety seems to be a valid excuse (Kruger et al., 2005).

A recently discovered and researched barrier to exercise is that of weight stigma. Weight stigma refers to negative attitudes and interactions in relation to weight. Individuals that experience shame regarding their weight are less likely to partake in exercise, as it is perceived that heavier individuals are less competent in exercise or physical activity (Vartanian & Novak, 2011).

Nolan et al.'s (2011) study on South African university students, through the use of the EBBS, reported that a lack of facilities and availability were the main barriers. Financially, gyms and studios can be expensive. Some individuals, especially students, do not have access to these funds resulting in them having little to no access to exercise environments (Nolan et al., 2011).

Students' common reasons for not engaging in exercise include lack of time, lack of interest, and lack of energy (Silliman et al., 2004; Van Niekerk, 2010). Students studying intense degrees may have a heavy workload, giving them little time to engage in exercise. Their interests may lie elsewhere, or they may have family commitments that hold them back from

having the time to exercise. A lack of space to exercise in has also been named as a barrier to exercise (Nolan et al., 2011). In a recent study conducted on university students in the UK, the greatest barriers were listed as such: physical exertion being the largest barrier, followed by time expenditure, exercise milieu and then family discouragement (Lovell et al., 2010). The least common barrier stated by university students in the UK was that of social acceptance (Lovell et al., 2010). The highest ranked response stated by students found by Grubbs and Carter (2002) was that exercise tires them. Other responses were that it is hard work, it fatigues them, it takes too much of their time, and family members do not encourage exercise (Grubbs & Carter, 2002). This finding suggests that students place little emphasis on the health benefits they may experience from exercise, reasoning that they do not have the time and it takes too much out of them.

Other individuals may not engage in exercise because they do not like exercise or may not know about the physical and psychological benefits of exercise (Nolan et al., 2011; Tumusiime & Frantz, 2006). They may be lazy, not enjoy exercise or lack confidence in their ability (Nolan et al., 2011). The self-motivation and motivation from others to get involved in physical activity may be lacking.

Grubbs and Carter (2002) used the EBBS to establish a relationship between the benefits and barriers perceived by 147 South African university students. A significant relationship between benefits and exercise, as well as between barriers and exercise was yielded.

2.4.4. Male and Female Exercise Participation

Gender differences are important factors when considering the prediction and perceptions of exercise (Naseer, Khoso, Naqvi, & Irfan, 2013). It is commonly thought that male and female perceptions of exercise differ, however this is not always the case. An example of this is that environments built for exercise, such as gyms, place increased attention on the body. This focus on the body usually raises body self-awareness and comparison to others is often made by

individuals who attend (Koyuncu et al., 2010). This perception of exercise is held by both men and women, and can hinder the individual to partake in regular physical exercise at gyms or studios. The individual may experience feelings of low self-worth or negative thoughts towards their body. The opportunity for the individual to exercise outside of these facilities may for various reasons not exist, and the individual may not receive the desired amount of exercise. However, home exercise routines may be useful when facilities are not available.

The type of exercise that each gender engages in differs. Men partake in more high-intensity exercise with strength training and competition. Thus, more male students engage in more vigorous and strength enhancing activity than female students (Grubbs & Carter, 2002). Women tend to engage in more aerobic exercise (Silliman et al., 2004). The preference for type of exercise usually depends on the aim the individual has for exercising. Men often prefer to exercise to gain muscle and strength, therefore strength and weight training is more appropriate. Most women are concerned with their size and shape and tend to partake in aerobic exercises in order to lose weight and tone their bodies. Women have expressed that exercise provides more psychological and body image benefits, but fewer social benefits (Harne & Bixby, 2005). It is clear that both men and women have found a positive relationship between exercise and the body. Hausenblas and Fallon (2006) confirmed this in their meta-analysis of the literature on exercise and body image. They went on to report findings indicating that gender moderated the relationship between exercise and body image. They also found the effect sizes for men to be significantly larger than for women (Hausenblas & Fallon, 2006) due to men exercising more for muscle and strength where women exercise more for weight-loss. The perceptions around exercise behaviour are likely to influence the motivation for physical activity.

2.4.5. Self-Determination Theory

Self-determination theory suggests that the individual's motivational state will influence the way in which they behave (Van Niekerk, 2010). People have intrinsic and extrinsic

motivations for engaging in physical activity or passivity (Withall et al., 2011). This theory proposes that an individual requires external support for their intrinsic motivation in order to maintain change in behaviour (Withall et al., 2011). If the individual is intrinsically motivated, they choose to exercise for the innate pleasure they receive from it. Those that participate in exercise due to intrinsic motivation are more likely to participate in the long term (Ingledew & Sullivan, 2002). Exercise motives that are self-determined or intrinsic include exercise for stress management, revitalisation, enjoyment, challenge, affiliation, ill-health avoidance, positive health, strength and endurance, and nimbleness (Krishen & Worthen, 2011).

If the individual chooses to exercise for the external rewards they will receive from it, they are extrinsically motivated (Ingledew & Sullivan, 2002). The motives that are considered controlling or extrinsic include exercise for social recognition, competition, health pressures, and weight management (Krishen & Worthen, 2011). It is believed that female regular exercisers experience higher levels of controlling motives. This is consistent with previous research suggesting that most women exercise to maintain their appearance, mood and weight (Krishen & Worthen, 2011). In a study conducted on university students in Johannesburg, it was found that external motivators such as lack of time and lack of environmental and social support were high, proving that self-determination was therefore low in students that do not exercise and also in females (Van Niekerk, 2010).

Chapter summary

From the research found above (Campbell & Hausenblas, 2009; Furnham et al., 2002; Gatab & Pirhayti, 2012; Ingledew & Sullivan, 2002; Koyuncu et al., 2010; Krishen & Worthen, 2011; Markula, 2007; Peltzer & Pengpid, 2012), it has been made clear that there is some relationship between body image perceptions and exercise. Since body image is affected through the individual's perception of the self and through comparison with others, it may be rectified through the act of regular exercise (Vartanian & Novak, 2011). Basset and Martin

Ginis (2011) recommend that moderators of this relationship should also be considered. Thus, for the purpose of the current study, the moderators considered were the perceptions of exercise being reasons for and barriers against exercise. The researcher aims to establish the relationship between exercise activity and perceived body image with the reasons for and barriers to exercise as moderators in this relationship.

Through the exploration of the perceptions around exercise regarding the benefits and barriers, the researcher aims to establish a relationship that expresses the effect that exercise may have on body image. Since exercise among students seems to be lacking, it is suggested that future exploration and intervention should be explored in order to rectify the effect it may have on their body image. Although most students do not exercise, those that do exercise have expressed various benefits of exercise in relation to their psychological health (Grubbs & Carter, 2002; Lovell et al., 2010; Tumusiime & Frantz, 2006; Van Niekerk, 2010). The researcher aimed to explore whether these stated benefits and barriers are in fact consistent with the researcher's sample and whether they moderated the sample's engagement with exercise.

CHAPTER THREE

3. METHODOLOGY

3.1. Introduction

This chapter aims to orientate the reader with regard to the methodology followed within this particular study. The research problem and the purpose of the study will be discussed to motivate the reason for this study. Following this, a discussion of the chosen research design and approach will then be presented. A positivistic paradigm was utilised in order to gain empirical data on the moderating effects of reasons to and barriers for exercise and how this influences the relationship between exercise and body image. Furthermore, the study's sample and sampling strategy will be explained. Thereafter, the chapter will explain the details of the measures, procedures, and statistical analyses used in this research. Lastly, the chapter will conclude with the ethical considerations implemented.

3.2. Research Design and Approach

Quantitative research

A quantitative research approach was favoured by the researcher, because such findings are typically generalisable and such data are objective. It also allows for empirical data to be obtained in a rigorous, statistical manner (Gravetter & Forzano, 2009). These objective statistics obtained from the use of a quantitative approach enable researchers to make comparisons between constructs under study (Terre Blanche, Durrheim, & Painter, 2006). Therefore, a quantitative research design was used in order to test the proposed hypotheses[1] and examine the relationship between exercise and body image. Quantitative research was also

[1] Discussed below in section 3.5. Research Hypotheses

chosen so that a large sample group could be used, allowing for as much data on the topic to be found as possible.

Positivistic paradigm

This research was conducted within a positivistic paradigm; meaning that the research emphasised a deductive approach, and was approached from an objective and detached epistemological stance in order to gain accurate descriptions of the constructs under interest (Terre Blanche et al., 2006). In conducting research within a positivistic paradigm, there is a greater allowance for human nature to be observed objectively and scientifically (Yates, 2004). With the research question[2] anchored in a positivistic paradigm, the researcher considered this to fit best with the research on body image and exercise and with the moderating factors involved. The objective and scientific nature of positivism was therefore employed in order to find objective, factual statistics in relation to body image and exercise (Terre Blanche et al., 2006). Through positivistic, quantitative analysis the researcher was able to deduce the relationship between university students' exercise behaviour, exercise perceptions and body image perceptions, which will be presented in the following chapter.

A cross-sectional research design was adopted as this allowed for data to be collected at one point in time (Chambliss & Schutt, 2012). A cross-section of the undergraduate population at a university in Johannesburg was taken. This included first, second and third year students. The university population chosen was assumed to be a relevant sample, as multiple cultures and ethnicities enrol at the university, thus providing a diverse cross-section of the population.

[2] Discussed below in section 3.3. Aim of the study

3.3. Research Problem

A review of the literature published on exercise and body image in a student population has established that there is a need for further information and exploration with regard to this topic. Previous studies (Grubbs & Carter, 2002; Lovell et al., 2010; Tumusiime & Frantz, 2006; Van Niekerk, 2010) have indicated that exercise has a positive impact on psychological health as well as body image satisfaction/dissatisfaction. The current research study aimed to add to the body of knowledge around the connection between body image and exercise by ascertaining whether or not the benefits and/or barriers moderators impact on their relationship.

3.4. Purpose of the Study

The purpose of this study was to investigate the relationship between exercise and the multi-dimensional construct of body image within a university student population. Furthermore, investigations into the perceptions of exercise including their benefits and barriers were made. This facilitated the investigations into the relationship between the moderating factors of benefits and barriers against exercise in relation to this relationship between exercise and body image. The perceptions of exercise (benefits and barriers) allowed the researcher to further explore how these perceptions impact on the frequency of exercise participation. In order to investigate this possible moderated relationship, participants were required to complete online self-report questionnaires.

3.5. Research Hypotheses

The general hypothesis is stated as follows:

Barriers and benefits to exercise participation will moderate the relationship between exercise (training hours) and body image.

Specific Hypothesis 1:

Barriers against exercise participation will moderate the strength and direction of the relationship between exercise (training hours) and body image.

Specific Hypothesis 2:

Benefits to exercise participation will moderate the strength and direction of the relationship between exercise (training hours) and body image.

3.6. Sample

The sample consisted of available participants, thus a convenience sampling (non-random sampling) strategy was used (Antonius, 2003; Daniel, 2012). Convenience sampling was used due to its high efficiency and response rate, and low associated cost (Highhouse & Gillespie, 2009). A convenience sample of undergraduate psychology university students between the ages of 18 and 29 years old (mean = 20.55) were included in this study. This sample was chosen as the researcher was interested in understanding the relationship between exercise and body image within a young adult population. University students were selected due to body image being most sensitive during the developmental stage of early adulthood and late adolescence (Veerman, 2013).

The sample consisted of 93 students of various ages, ethnicities, genders and exercise levels. The sample consisted of 82.8 % female and 17.2 % male participants. Of the collected 93 surveys, only 49 were decipherable and usable. A detailed breakdown of the demographics can be found in Table 4.1 in Chapter 4 (Results). A diverse sample population was used to attain results with significant statistical value, in order to explain the interaction between the variables.

3.7. Procedure

The research project was presented to first, second and third year Psychology students at the University of Johannesburg during a designated class, which was arranged with the lecturer in charge. The students were informed that the purpose of this research was to gather data for a Master's degree research project. The researcher provided information regarding the research project and participation in the project. It was made clear that participation would be voluntary

and that there would be no consequence for not participating or withdrawing from the study. Participants were informed that the information acquired from their participation would remain anonymous. The students were informed that if they had any questions, they could contact the researcher by email.

All information about the research, including the scope of the research, was provided in an information sheet (see Appendix A) to the students. Once the students were comfortable with the information given, they were able to choose whether they wanted to participate or not. The researcher provided these participants with the necessary information and instructions for participation. Students who were interested in participating were able to contact the researcher with further queries.

In the instructions provided, the participants were directed to the university online portal, uLink, where a link to the researcher's secured webpage was provided. On this site, a biographical questionnaire (see Appendix B) and the body image and exercise questionnaires (see Appendix B) could be completed. Consent was obtained online (see Appendix B), before completing the questionnaires. The online survey was chosen because it allowed participants to complete the questionnaire in their own time and from any location (e.g. at home or in the university's computer laboratories). No time limit was set, allowing the participants ample time to complete the questionnaire. No identifiable information was asked for in the questionnaire, to ensure that anonymity was maintained. The participants were required to sign in with their student number to ensure that no repeat entries were made; however, their student number would not be connected to their responses. Once the data were captured, a spreadsheet containing this data was compiled for data analysis.

3.8. Measurement Instruments

Participants of the research were asked to complete an online questionnaire that consisted of a biographical section, as well as the self-report inventories used to assess body image

perception and exercise barriers and benefits. The biographical questionnaire included questions around participants': age, gender, ethnicity, whether or not they exercise, what type of exercise they engage in, and how often they exercise. The body image perception and exercise benefits and barriers measures will be discussed below.

3.8.1. Multi-dimensional Body-Self Relationship Questionnaire (MBSRQ)

The Multi-dimensional Body-Self Relationship Questionnaire MBSRQ, developed by Cash (2012), measures the perception of an individual's body using a 69-item scale. The MBSRQ measures 10 subscales: appearance evaluation (8 items), appearance orientation (11 items), fitness evaluation (3 items), fitness orientation (13 items), health evaluation (6 items), health orientation (8 items), illness orientation (5 items), body area satisfaction (9 items), overweight preoccupation (4 items) and self-classified weight (2 items). The MBSRQ assesses body image and physical self-perception on an evaluative, cognitive (affect) and behavioural (investment) level (Cash, 2012).

The **appearance evaluation** subscale measures feelings of attractiveness. The **appearance orientation** subscale measures the investment placed in appearance. High scores on the appearance subscales express satisfaction with appearance. The **fitness evaluation** subscale measures levels of fitness, while **fitness orientation** measures the investment in becoming fit. High scores in these fitness subscales suggest fitness being valued by the individual. The **health evaluation** subscale measures the feelings of health an individual has, while the **health orientation** subscale measures the investment an individual makes in becoming healthy. The **illness orientation** subscale measures the feelings of being unwell; if an individual yields high scores it suggests that they are more likely to seek treatment for illness. The **body areas** subscale measures the level of satisfaction/dissatisfaction an individual has with certain areas of the body. A high score on this subscale suggests satisfaction with body parts. The **overweight preoccupation** subscale measures the preoccupation an individual has

with their weight (weight vigilance, dieting, etc.). The last subscale, **self-classified weight**, measures the individual's view of being very underweight to very overweight (Smith & Davenport, 2012).

Body image evaluation is measured by the following subscales: fitness evaluation and self-classified weight.

Body image affect is measured by the following subscales: appearance evaluation, health evaluation, illness orientation, and body areas.

Body image investment is measured by the following subscales: appearance orientation, fitness orientation, health orientation, and overweight preoccupation.

A Likert-scale, ranging from 1 to 5, is used to answer each item. Items 1 to 57 were the be answered as 1 = Definitely Disagree, 2 = Mostly Disagree, 3 = Neither Agree Nor Disagree, 4 = Mostly Agree, or 5 = Definitely Agree. Item 58 was to be answered with one of the following: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, or 5 = Very Often. Items 59 and 60 were to be answered with one of the following: 1 = Very Underweight, 2 = Somewhat Underweight, 3 = Normal Weight, 4 = Somewhat Overweight, or 5 = Very Overweight. Lastly, items 61 to 69 were to be answered with one of the following: 1 = Very Dissatisfied, 2 = Mostly Satisfied, 3 = Neither Satisfied nor Dissatisfied, 4 = Mostly Satisfied, or 5 = Very Satisfied.

The Cronbach Alpha scores ranged from 0.68 to 0.82, proving good internal consistency (Peltzer & Pengpid, 2012). Specifically, the appearance evaluation scale yielded a Cronbach Alpha score of 0.88 and a test-retest reliability of 0.91. In the current study a very good Cronbach Alpha of 0.86 was found. The appearance orientation scale yielded an Alpha score of 0.85 and a test-retest reliability score of 0.90 (Muth & Cash, 1997). The current study found a good Cronbach Alpha of 0.78. The health orientation, fitness orientation, and overweight preoccupation subscales yielded an Alpha score of 0.76 – 0.90 and a test-retest reliability score of 0.85 – 0.94 (Devaraj & Lewis, 2010). The current study yielded Cronbach Alphas of 0.78,

0.87 and 0.68 for health orientation, fitness orientation and overweight preoccupation, respectively. The MBSRQ was used to assess body image through a multi-dimensional approach, assessing the individual holistically.

The MBSRQ was selected as it has been used in previous research with individuals older than 15 years of age, and is known to be valid and reliable (Cash, 2012; Hamilton, 2008). The MBSRQ also provides a holistic assessment of the individual's perceptions of and behaviours towards their body. This holistic assessment allowed the researcher to fully understand all aspects of body image experienced and to obtain a statistical measurement of the participants' body image satisfaction and dissatisfaction.

3.8.2. Exercise Benefits/Barriers Scale (EBBS)

The Exercise Benefits/Barriers Scale (EBBS) assesses an individual's reasons for exercising (or not exercising). This measure was developed by Sechrist, Walker and Pender (1987). Sechrist et al. developed this instrument using 650 adults between the ages of 18 and 88 years to answer items that were inductively obtained from interviews and available literature. Originally, through factor analysis, a nine-factor solution was found. Through second order factor analysis a two-factor solution was yielded; a benefits factor and a barriers factor (Sechrist et al., 1987). The researcher's focus was on these two factors (benefits and barriers) of the current EBBS.

The EBBS consists of 43 items, with 29 items measuring the perceived benefits of exercise and 14 measuring the perceived barriers to exercise. The barrier sub-scale consists of items 4, 6, 9, 12, 14, 16, 19, 21, 24, 28, 33, 37, 40, and 42; with the benefits sub-scale consisting of the remaining items (Sechrist et al., 1987). A Likert-scale ranging from 1 to 4 is used to answer each item, where 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree.

Sechrist et al. (1987) reported a Cronbach Alpha score of 0.954 and a test-retest reliability score of 0.89 for the benefits subscale. The current study found a very good Alpha of 0.94. The

barriers subscale received a Cronbach Alpha score of 0.866 and a test-retest reliability score of 0.77, proving good internal consistency and reliability (Sechrist et al., 1987). The current study yielded a very good Alpha of 0.80. The two-week test-retest reliability correlation coefficient for the entire scale was 0.89, with 0.89 for the benefits scale and 0.77 for the barriers scale (Ortabag, Ceylan, Akyuz & Bebis, 2010).

There are two ways the EBBS can be scored; it can be scored as one scale or as two separate scales. The barriers scale is reverse scored generating scores between 43 and 172 (Sechrist et al., 1987). The benefits scale is usually scored generating scores between 29 and 116. The scores on the entire EBBS can fall between 43 and 172. A higher score suggests the individual perceives exercise more positively. For the purpose of this research the researcher chose to score the EBBS as two separate scales.

The EBBS was chosen to measure the moderating variables, barriers to and benefits of exercise, because of its successful use with university students and previous use in South African studies (Grubbs & Carter, 2002; Nolan et al., 2011). The current study's intention was to further explore possible perceived benefits and barriers of exercise within a South African university student population, with the additional variable of body image; making this study unique with regard to South African literature on exercise and body image.

3.9. Statistical Analyses

The research data were captured using the statistical programme SPSS 22. A Pearson's Product Moment Correlation Coefficient analysis was first conducted in order to examine the relationship between the variables of interest, and to check for multicollinearity between the various parameters of this study (exercise and body image perceptions). A moderated multiple regression analysis was conducted to determine the extent to which exercise predicts body image, while examining the possible moderating role of reasons for and barriers to exercise.

It is important to note that the sample size in the current study does not comply with the requirements for a moderated multiple regression analysis. The analyses were conducted despite this concern, as time did not allow for resampling to take place. Results should therefore be interpreted with caution.

Moderated multiple regression analysis is a technique used to analyse multivariate relationships, meaning that it measures whether a variable is related to other variables. More specifically, moderated multiple regression analysis looks at the relationship between a dependent variable and two or more independent variables (predictors), while investigating the possible role of a moderating, categorical variable (Aguinis, 2004). The significance level was set at 0.05 for the purpose of this research. The specific results of this study will be discussed in the following chapter (Chapter 4).

3.10. Ethical Considerations

Ethical considerations, as laid out by the University of Johannesburg, were adhered to throughout this research. The researcher obtained permission from the University of Johannesburg Ethics Committee and the Higher Degrees Council to proceed with the research.

Participation was completely voluntary and all information was kept anonymous and confidential. The participants were asked to give consent online. Participants were informed of the nature and purpose of the study. If the participant felt as though they wished to withdraw from the research, they were free to do so without any repercussion. The researcher took as much caution as possible to reduce risk of harm, although no harm was predicted during this process. The numbers for SADAG and Lifeline were provided to the participants if they required counsel. All participants were treated with care and respect, and their integrity was respected. The participants were invited to contact the researcher if they had any questions regarding the study.

3.11. Closing

This chapter discussed the methodology of this study. The following chapter will report the specific results of the study.

CHAPTER FOUR

4. RESULTS

4.1. Introduction

This chapter will include the findings of this study. The results are reported as they pertain to the general hypotheses indicated in Chapter Three (Methodology). The descriptive statistics are reported first, followed by the correlations and multiple regression results.

4.2. Descriptive Statistics

The sample consisted of 49 male and female university students registered for first, second and third year. These participants were between the ages of 18 and 29 years old and from 4 different ethnicities. The following tables provide the descriptive information about the sample.

Table 4.1: Gender Statistics

	Gender	Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	Male	7	14.3	14.3	14.3
	Female	42	85.7	85.7	100.0
	Total	49	100.0	100.0	

Table 4.1 shows the majority of participants to be female, skewing the distribution of females to males. Females made up 85.7 % of the sample whereas males made up 14.3 % of the sample.

Table 4.2: Age Statistics

	Age (in years)	Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	18	2	4.1	4.1	4.1
	19	7	14.3	14.3	18.4
	20	20	40.8	40.8	59.2
	21	10	20.4	20.4	79.6
	22	8	16.3	16.3	95.9
	23	1	2.0	2.0	98.0
	29	1	2.0	2.0	100.0
	Total	49	100.0	100.0	

Table 4.2 shows the majority (40.8 %) of the sample to be 20 years old. The remaining most representative age groups were 21 years old (20.4 %), 22 years old (16.3 %), and 19 years old (14.3 %).

Table 4.3: Ethnic Division

		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	Black	28	57.1	57.1	57.1
	Coloured	11	22.4	22.4	79.6
	Indian	3	6.1	6.1	85.7
	White	7	14.3	14.3	100.0
	Total	49	100.0	100.0	

Table 4.3 shows the majority of the sample to be made up of Black (57.1 %) participants. The next most represented ethnic groups were Coloured (22.4 %), White (14.3%) and Indian making up the remaining 6.1 %.

Table 4.4: Exercise Type

		Frequency	Per cent	Valid per cent	Cumulative per cent
Valid	Aerobic	16	32.6	32.6	32.6
	Anaerobic	4	8.2	8.2	40.8
	Both of the above	8	16.3	16.3	57.1
	I don't exercise	21	42.9	42.9	100.0
	Total	49	100.0	100.0	

Table 4.4 displays the majority of participants (42.9 %) do not exercise, with the major type of exercise to be aerobic (32.6 %). Anaerobic exercise (8.2 %), and both aerobic and anaerobic exercise (16.3 %) are also described.

4.3. Statistics for the Exercise Benefits/Barriers scale and Multidimensional Body-Self Relations Questionnaire

Table 4.5 describes the descriptive data for the Exercise Benefits/Barriers Scale and the Multidimensional Body-Self Relations Questionnaire. From the Exercise Benefits/Barriers scale exercise benefits received a higher mean score. Exercise benefits had a mean score of 91.86 and exercise barriers had a mean score of 41.94. In relation to the MBSRQ, appearance orientation (42.80) and fitness orientation (39.27) had the higher mean scores. Self-classified weight had the lowest mean score (6.33).

Exercise barriers, fitness orientation, appearance evaluation, health evaluation, health orientation, overweight preoccupation, fitness evaluation, illness orientation, and body area

satisfaction were negatively skewed. Exercise benefits, appearance orientation, and self-classified weight were positively skewed. For most subscales a normal distribution was not obtained. The skewness standard error was 0.340 with the kurtosis standard error of 0.668.

Table 4.5: Descriptive Statistics for the Exercise Benefits/Barriers scale and Multidimensional Body-Self Relations Questionnaire

	N	Mean	Std. Deviation	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
Exercise barriers	49	41.94	4.11	-.089	.340	-.574	.668
Exercise benefits	49	91.86	9.34	.438	.340	.236	.668
Appearance orientation	49	42.80	5.09	.419	.340	.152	.668
Fitness orientation	49	39.27	7.74	-.129	.340	-.086	.668
Appearance evaluation	49	24.18	4.98	-.375	.340	-.440	.668
Health evaluation	49	17.04	2.06	-.236	.340	-.370	.668
Health orientation	49	27.24	4.12	-.870	.340	2.910	.668
Overweight preoccupation	49	11.47	2.75	-.032	.340	-.726	.668
Fitness evaluation	49	9.92	1.82	-.497	.340	.234	.668
Illness orientation	49	16.08	3.10	-.857	.340	1.400	.668
Self-classified weight	49	6.33	1.33	.474	.340	.741	.668
Body area satisfaction	49	31.98	6.15	-.412	.340	-.263	.668

4.3.1. Exercise Barriers Scale

The questions for the exercise barrier subscale were as follows: 1) Exercising takes too much of my time, 2) Exercise tires me, 3) Places for me to exercise are too far away, 4) I am too embarrassed to exercise, 5) It costs too much to exercise, 6) Exercise facilities do not have convenient schedules for me, 7) I am fatigued by exercise, 8) My spouse (or significant other)

does not encourage exercising, 9) Exercise takes too much time from family relationships, 10) I think people in exercise clothes look funny, 11) My family members do not encourage me to exercise, 12) Exercise takes too much time from my family responsibilities, 13) Exercise is hard work for me, 14) There are too few places for me to exercise. The results for the barriers subscale seen in Table 4.6 indicate a highest score for 'My spouse (or significant other) does not encourage exercising' (16.3 %), followed by 'Exercise is hard work for me' (14.3 %), and

Table 4.6: Exercise Barrier Subscale Statistics for Exercise Benefits/Barriers Scale

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	2.0	2.0	2.0
	2	4	8.2	8.2	10.2
	3	3	6.1	6.1	16.3
	4	4	8.2	8.2	24.5
	5	2	4.1	4.1	28.6
	6	5	10.2	10.2	38.8
	7	2	4.1	4.1	42.9
	8	8	16.3	16.3	59.2
	9	2	4.1	4.1	63.3
	10	3	6.1	6.1	69.4
	11	2	4.1	4.1	73.5
	12	4	8.2	8.2	81.6
	13	7	14.3	14.3	95.9
	14	2	4.0	4.0	100.0
	Total	49	100.0	100.0	

'Exercise facilities do not have convenient schedules for me' (10.2 %).

4.3.2. Exercise Benefits Scale

The results for the exercise benefits scale are found below in Table 4.7. The questions for the exercise barrier subscale were as follows: 1) I enjoy exercise, 2) Exercise decreases feelings of stress and tension for me, 3) Exercise improves my mental health, 4) I will prevent heart attacks by exercising, 5)Exercise increases my muscle strength, 6) Exercise gives me a sense of personal accomplishment, 7) Exercising makes me feel relaxed, 8) Exercising lets me have contact with friends and persons I enjoy, 9) Exercising will keep me from having high blood pressure, 10) Exercising increases my level of physical fitness, 11) My muscle tone is improved with exercise, 12) Exercising improves functioning of my cardiovascular system, 13) I have improved feelings of well-being from exercise, 14) Exercise increases my stamina, 15) Exercise improves my flexibility, 16) My disposition is improved with exercise, 17) Exercising helps me sleep better at night, 18) I will live longer if I exercise, 19) Exercise helps me decrease fatigue, 20) Exercising is a good way for me to meet new people, 21) My physical endurance is improved by exercising, 22) Exercising improves my self-concept, 23) Exercising increases my mental alertness, 24) Exercise allows me to carry out normal activities without becoming tired, 25) Exercise improves the quality of my work, 26) Exercise is good entertainment for me, 27) Exercising increases my acceptance by others, 28) Exercise improves overall body functioning for me, 29) Exercise improves the way my body looks. Table 4.6 indicates that participants rated ‘Exercising lets me have contact with friends and persons I enjoy’ and ‘Exercising increases my level of physical fitness’ equally with 8.2 %. Followed by ‘Exercising makes me feel relaxed’, ‘Exercising will keep me from having high blood pressure’, ‘I have improved feelings of well-being from exercise’, ‘Exercise increases my stamina’, and ‘My disposition is improved with exercise’ (6.1%).

Table 4.7. Exercise Benefits Subscale Statistics for Exercise Benefits/Barriers Scale

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	2.0	2.0	2.0
	2	1	2.0	2.0	4.1
	3	1	2.0	2.0	6.1
	4	1	2.0	2.0	8.2
	5	2	4.1	4.1	12.2
	6	1	2.0	2.0	14.3
	7	3	6.1	6.1	20.4
	8	4	8.2	8.2	28.6
	9	3	6.1	6.1	34.7
	10	4	8.2	8.2	42.9
	11	2	4.1	4.1	46.9
	12	1	2.0	2.0	49.0
	13	3	6.1	6.1	55.1
	14	3	6.1	6.1	61.2
	15	1	2.0	2.0	63.3
	16	3	6.1	6.1	69.4
	17	1	2.0	2.0	71.4
	18	1	2.0	2.0	73.5
	19	1	2.0	2.0	75.5
	20	2	4.1	4.1	79.6
	21	1	2.0	2.0	81.6
	22	2	4.1	4.1	85.7
	23	1	2.0	2.0	87.8

24	1	2.0	2.0	89.8
25	1	2.0	2.0	91.8
26	1	2.0	2.0	93.9
27	1	2.0	2.0	95.9
28	1	2.0	2.0	98.0
29	1	2.0	2.0	100.0
Total	49	100.0	100.0	

4.3. Correlations between training hours, exercise benefits/barriers, and body image

Table 4.8 displays the correlation between the variables of focus in the present study. Significant positive correlations between Training Hours and Barriers to Exercise ($r = .50$, $p < 0.01$) and Training Hours and Benefits to Exercise ($r = .372$, $p < 0.01$) were found. Body Image showed significant positive correlations with Barriers to Exercise ($r = .488$, $p < 0.01$) and Benefits to Exercise ($r = .558$, $p < 0.01$). No significant correlation between Training Hours and Body Image was found.

Table 4.8: Correlations between Training Hours, Exercise Benefits/Barriers, and Body Image

	Exercise barriers	Exercise benefits	Body image
Training hours	.500**	.372**	.233
Exercise barriers		.277**	.488**
Exercise benefits			.558**

**. Correlation is significant at the 0.01 level (2-tailed).

4.4. Correlations between exercise benefits/barriers, and body image

Table 4.9 displays the correlations between exercise benefits/barriers and body image. Body image is described according to the subscales of the MBSRQ measurement mentioned in Chapter Three (Methodology). The results indicate a significant relationship between Exercise Barriers and Fitness Orientation ($r = .544$, $p < 0.01$), Health Evaluation ($r = .385$, $p < 0.01$), and Health Orientation ($r = .339$, $p < 0.01$). A significant relationship is also described between Exercise Benefits and Fitness Orientation ($r = .709$, $p < 0.01$), Health Orientation ($r = .543$, $p < 0.01$), and Fitness Evaluation ($r = .352$, $p < 0.01$).

Table 4.9: Correlations between EBBS Subscales and MBSRQ Subscales

	AO	FO	AE	HE	HO	OP	FE	IO	SW	BAS	BI
Barriers	.107	.544**	.142	.385**	.339**	-.037	.131	.230*	-.014	.159	.472**
Benefits	.256*	.709**	.222*	.259*	.543**	-.034	.352**	.237*	-.260*	.098	.549**
Benefits X Barriers	.237*	.768**	.226*	.329**	.538**	-.042	.328**	.266*	-.216*	.140	.582**

**. Correlation is significant at the 0.01 level (2-tailed). AO – Appearance Orientation, FO – Fitness Orientation, AE – Appearance Evaluation, HE – Health Evaluation, HO – Health Orientation, OP – Overweight Preoccupation, FE – Fitness Evaluation, IO - Illness Orientation, SW – Self-classified Weight, BAS – Body Area Satisfaction, BI – Body Image

4.5. Results pertaining to Specific Hypothesis 1

The following results pertain to Specific Hypothesis 1, which states that barriers to exercise would moderate the strength and direction of the relationship between exercise (training hours) and levels of body image. A hierarchical moderated multiple regression analysis was performed with body image serving as the dependent variable, training hours as the independent variable and barriers to exercise serving as a moderator variable. As mentioned

in Chapter Three (Methodology), the sample size did not comply with the requirements of a moderated multiple regression analysis. Results should be interpreted with caution.

Training hours was entered into the regression equation first, followed by barriers to exercise and finally followed by the interaction between training hours and barriers to exercise. The results are summarised in Table 4.10.

Table 4.10: Model Summary of the Interaction between Training Hours and Barriers to Exercise

					Change Statistics				
Model	*R*	R^2	Adjusted R^2	Std. Error of the Estimate	ΔR^2	ΔF	df^1	df^2	*F*
1	.233[a]	.054	.034	21.83854	.054	2.750	1	48	.104
2	.497[b]	.247	.215	19.68613	.193	12.070	1	47	.001
3	.522[c]	.272	.225	19.57138	.025	1.553	1	46	.219

Note. R^2 = multiple regression correlation coefficient. ΔR^2 = change in multiple regression correlation coefficient.

[a] Predictors: (Constant), Training hours
[b] Predictors: (Constant), Training hours, Exercise Barriers
[c] Predictors: (Constant), Training hours, Exercise Barriers, Training hours X Exercise barriers

With training hours as the only predictor, $R^2 = .034$, $F(1, 48) = 2.750$, $p = .104$. Barriers to exercise explained an additional 19.3 % (R^2 Change) of the variance in body image, $\Delta R^2 = .215$, $F(1, 47) = 12.070$, $p < .01$. Furthermore, the interaction of training hours with barriers to exercise explained an additional 2.5 % (R^2 Change), $\Delta R^2 = .225$, $F(1, 46) = 1.553$, $p = .219$.

The standardised regression weights, *t*-values and *p*-levels of the predictor variable, barriers to exercise and body image are summarised in Table 4.11. Overall, the model is not significant and Specific Hypothesis 1 is not supported.

Table 4.11:Standardised Regression Weights, t-values and p-levels of the Predictor Variable, Barriers to Exercise and Body Image

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	214.675	7.418		28.941	.000
	Training hours	5.227	3.151	.233	1.658	.104
2	(Constant)	119.149	28.297		4.211	.000
	Training hours	2.317	2.962	.103	.782	.438
	Exercise barriers	2.434	.701	.458	3.474	.001
3	(Constant)	46.394	64.811		.716	.478
	Training hours	38.284	29.013	1.705	1.320	.194
	Exercise barriers	4.207	1.584	.792	2.656	.011
	Training hours X barriers	-.864	.694	-1.733	-1.246	.219

a. Dependent Variable: Body image

4.6. Results pertaining to Specific Hypothesis 2

The following results pertain to Specific Hypothesis 2, which states that benefits to exercise would moderate the strength and direction of the relationship between exercise (training hours) and levels of body image. A hierarchical moderated multiple regression analysis was performed with body image serving as the dependent variable, training hours as the independent variable and benefits to exercise serving as a moderator variable.

Training hours was entered into the regression equation first, followed by benefits to exercise and finally followed by the interaction between training hours and benefits to exercise. The results are summarised in Table 4.12.

Table 4.12: Training Hours and Benefits to Exercise

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df1	Sig. F Change
1	.233[a]	.054	.034	21.83854	.054	2.750	1	48	.104
2	.558[b]	.311	.282	18.83475	.257	17.531	1	47	.000
3	.558[c]	.311	.266	19.03750	.000	.004	1	46	.949

a. Predictors: (Constant), Training Hours

b. Predictors: (Constant), Training Hours, Exercise Benefits

c. Predictors: (Constant), Training Hours, Exercise Benefits, Training Hours X Exercise Benefits

With training hours as the only predictor, $R^2 = .034$, $F(1, 48) = 2.750$, $p = .104$. Benefits to exercise explained an additional 25.7 % (R^2 Change) of the variance in body image, $\Delta R^2 = .282$, $F(1, 47) = 17.531$, $p < .001$. The interaction of training hours with benefits to exercise did not contribute any additional variance (R^2 Change), $\Delta R^2 = .266$, $F(1, 46) = .004$, $p = .949$.

The standardised regression weights, *t*-values and *p*-levels of the predictor variable, benefits to exercise and body image are summarised in Table 4.14. Overall the model is not significant and Specific Hypothesis 2 is not supported.

Table 4.13: Standardised regression weights, t-values and p-levels of benefits to exercise and body image

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	214.675	7.418		28.941	.000
	Training Hours	5.227	3.151	.233	1.658	.104
2	(Constant)	103.207	27.380		3.769	.000
	Training Hours	-.390	3.031	-.017	-.129	.898
	Exercise Benefits	1.347	.322	.565	4.187	.000
3	(Constant)	99.261	66.845		1.485	.144
	Training Hours	1.297	26.192	.058	.050	.961
	Exercise Benefits	1.392	.766	.584	1.818	.076
	Training hours X Exercise Benefits	-.019	.292	-.086	-.065	.949

a. Dependent Variable: Body image

4.7. Closing

This chapter reported the results of the present study. The Discussion Chapter (Chapter Five) will discuss the abovementioned results in relation to the literature and previous findings.

CHAPTER FIVE

5. DISCUSSION

5.1. Introduction

This chapter will discuss the results as reported in Chapter Four (Results). It will examine the findings as pertaining to the general hypothesis that barriers and benefits to exercise participation will moderate the relationship between exercise and body image, stated in Chapter Three (Methodology). Furthermore, it will examine the specific hypotheses stated in Chapter Three (Methodology) being: 1) barriers against exercise participation will moderate the relationship between exercise and body image, and 2) benefits to exercise participation will moderate the relationship between exercise and body image. Given the limitations imposed by the small sample size, the discussion will place more emphasis on the correlations found to be significant between the variables.

5.2. Results pertaining to the demographics of the sample

The convenience sample comprised of students at the University of Johannesburg. The intention was to obtain a sample of various genders, as well as diverse ages and ethnicities. However, this sample's distribution was skewed due to the majority of the sample comprising of female participants (85.7 %), with male participants making up only 14.3 %. Due to the proportion of this sample, the results cannot be generalised to all heterogeneous student populations.

Of this sample's participants, the majority of the sample was Black (57.1 %) with 22.4 % Coloured and 14.3 % White ethnicities being represented in the sample. The remaining 6.1 % consisted of participants of Indian ethnicity. Since the sample consisted mainly of Black participants it is likely that the sample presented with less body image dissatisfaction, which is consistent with the research finding of Mwaba and Roman (2009) who found low levels of body dissatisfaction in a sample of Black South African female students. The similar result is

hypothesised to be due to the majority of the sample consisting of Black African females. As previously mentioned, the ideal body is of a larger figure, which is different to the skinny ideal of the Western culture as depicted in the literature. Thus, body dissatisfaction in relation to a 'skinny' body is less within a Black African population.

The ages of the participants ranged between 18 and 29 years, with a mean age of 20 years. As previously mentioned (Chapter Two), at this phase of life, especially if entering tertiary education, these individuals are likely to face negative relationships with their body and engage in sedentary activities. Of the current sample, 42.9 % reported that they engage in little to no exercise, and thus show some consistency with research (Tumusiime & Frantz, 2006) which states that some students engage more in sedentary activity and less in exercise. Tumusiime and Frantz (2006) found that more than 70 % of their sample (tertiary students) did not participate in exercise, which is significantly higher than in the current sample (42.9 %). Tumusiime and Frantz's sample consisted of 500 Rwandan students enrolled in five different universities; the size of the sample and the use of five university sites may have increased the chances of observing less exercise participation, as compared to the current study. Again, the perceived ideal of a larger African body could lead to less interest in exercise.

With such a large number of participants in the current study not engaging in exercise, it is possible that the participants' perceptions of exercise may not motivate them adequately to engage in exercise. The lack of exercise in a student population is also consistent with literature that reports decreasing student exercise activity and increased sedentary behaviours (Janse van Rensburg & Surujlal, 2013; Reddy et al., 2010; Silliman et al., 2004; Tumusiime & Frantz, 2006). Thus, it would seem that a lack of exercise during young adulthood is almost developmentally expected.

According to the gathered data, of the 57.1 % of participants that exercise, the exercise type most engaged in is aerobic exercise (32.6 %). Consistent aerobic exercise is said to

increase the rate of recovery from psychosocial stress (Edwards, 2006). In line with this previous research, the current study's results could suggest that 32.6 % of the participants might show more resilience to the stressors they experience. Devaraj and Lewis (2010) and Murray et al. (2013) reported that stress is linked to forming dissatisfaction with body image. From this it can be inferred that if stress is reduced, body image dissatisfaction is less likely to occur. Stress was not explored in this study nor is it in the scope of this study, but is an important factor to consider when exploring exercise and the university student's lifestyle, especially in relation to academic performance. Thus, stress should be an additional variable focused on in future research.

5.3. Broad conclusions from survey responses

As a whole, participants in this study showed agreement with previous findings in that most students believe that exercise offers positive health benefits (Lovell et al., 2010). The most commonly proposed benefits of exercise mentioned in the literature are weight loss, stress management, self-esteem and revitalisation (Krishen & Worthen, 2011; Withall et al., 2011). The findings in the current study differed from the abovementioned benefits. The highest ranked benefits of exercise in accordance with the EBBS measurement administered in this study were: increased level of fitness (including stamina), increased opportunity for social contact, improvement in cardiovascular functioning, and improvement in mental health and well-being. This suggests that the participants in this study view performance and physical benefits of importance. It can be hypothesised that the emphasis on performance and physical health are linked to the African ideal body looking healthy and lacking illness.

The highest ranked barriers of exercise in accordance to the EBBS measurement were: lack of encouragement, that exercise is hard work, and lack of convenience. These findings are inconsistent with findings in literature (Lovell et al., 2010; Nolan et al., 2011), where fatigue and exertion were highly ranked as barriers in a university population. In this study fatigue only

received 4.1 % of the total percentage. Grubbs and Carter (2002) found that exercise fatigue was the highest ranked response for students not engaging in exercise. It is likely that University and this phase of life being a high stress environment may also influence levels of fatigue. These barriers place emphasis on the physical impact on the body and infer a lack of physical fitness. Although the university where the current sample is based has a gymnasium on site, there is a monthly fee which may have a financial implication resulting in a possible barrier to exercising on campus. The availability of an exercise location hindered by the financial barrier also seemed to be the case in Nolan et al.'s (2011) study.

5.4. Results pertaining to the correlations between exercise participation (training hours) and barriers/benefits to exercise

According to the results obtained, there is a significant positive relationship between exercise barriers and training hours. This unusual and illogical result may be the outcome of the small sample size that may not be generalisable to the general public. It is also possible that due to the majority of participants not exercising the number of training hours were fewer. It may also be due to the way in which the participants answered the questionnaire. A significant positive relationship was found between exercise benefits and training hours. According to the results, barriers to exercise have a stronger correlation with training hours (exercise participation) than benefits to exercise. This is consistent with research stating that barriers to exercise often outweigh the motivation offered by the benefits of exercise when determining exercise participation (Lovell et al., 2010; Nolan et al., 2011), which could explain why barriers to exercise have a stronger relationship to training hours than benefits. Contradictory to the findings above, Grubbs and Carter (2002) observed a negative correlation between barriers and training hours in a sample of 147 American students. They reported that individuals who experience more benefits of exercise are more likely to participate in exercise (Grubbs & Carter, 2002).

The current study reports a significant relationship between exercise perceptions (benefits and barriers), exercise (training hours), and body image at the 0.01 significance level. This correlates with previous research showing a link between the expressed variables. Edwards et al. (2005) found a significant relationship between exercise and physical self-perception, and more recent research by Homan and Tylka (2014) found a significant relationship between exercise frequency, body appreciation and exercise motives. This leads to the conclusion that exercise and body image are commonly interlinked, and that a significant relationship has been observed in previous research dating back to over a decade.

Relating to this, other research demonstrates a significant positive relationship between exercise and body image. Gatab and Pirhayti (2012) found that eight weeks of exercise contributed to improved general health including a positive physical image in a sample of 80 university students. Brudzynski and Ebben (2010) found that 58 % of a sample of university students reported that the number of training hours was influenced by their perceived body image, locating body image as the predictor of exercise. Homan and Tylka's (2014) study on American female university students between the ages of 18 to 51 showed that the appearance-based benefit of exercise and exercise frequency was positively related to body appreciation, as measured by the Body Appreciation Scale. More specifically, they found that women who exercise more frequently have more body image satisfaction; however, if the motivator to exercise was based on appearance benefits, the strength of the relationship was weakened. This result is likely to have been influenced by the broad age range and the gender of the sample.

According to the literature and the current study's findings, exercise and exercise perceptions probably play a pivotal role in the development and maintenance of body image. A greater understanding of body image can therefore be grasped through the correlations of the MBSRQ questionnaire, which is discussed below in relation to the current study's findings.

5.5. Results pertaining to the correlations between the variables of the MBSRQ measurement

The results obtained from the MBSRQ measurement administered in this study indicate a significant relationship between Exercise Barriers and Fitness Orientation, Health Evaluation, Illness Orientation and Health Orientation. This indicates that body image investment and affect play a role in determining the role of exercise barriers. Body image investment showed a stronger positive correlation than body image affect in the current study. This suggests that the less the individual feels inclined to invest time, effort or priority in their body, the less important it is for that individual to exercise.

In contrast to this study, a study by Peltzer and Pengpid (2012) based on a South African university population, found no significant results in the relationship between physical inactivity and the MBSRQ constructs. However, they found significant relationships between physical activity and Fitness Orientation, Health Orientation and Fitness Evaluation. As these MBSRQ constructs fall within the body image investment and body image affect domains, it can be suggested that body image investment and affect play a role in benefits of exercise.

In agreement with the study by Peltzer and Pengpid (2012), the current study showed a significant positive relationship between Exercise Benefits and Fitness Orientation, Health Orientation, and Fitness Evaluation, further indicating that body image investment plays a role in terms of exercise benefits. This suggests that the more attention paid to body image, the more likely the individual is to perceive the benefits of exercise. It was also found that body image investment plays a larger role than evaluation does with regard to the perceived benefits of exercise, similar to that with barriers.

A significant positive relationship was observed between body image perceptions and the number of training hours. This could lead to the conclusion that the way in which individuals view themselves is likely to play a role in determining whether or not they exercise. The

correlation between benefits of exercise and body image was somewhat stronger than that with barriers, suggesting that benefits of exercise might play a bigger role than the barriers do. According to literature (Edwards, 2006; Nolan et al., 2011), exercise is positively related to body image. This link is also demonstrated in Hausenblas and Fallon's (2006) meta-analysis on exercise and body image, which reported that individuals who exercise have increased body image satisfaction. Aerobic and anaerobic exercise concurrently were reported to have the highest impact on body image. Krishen and Worthen (2011) reported that a positive self-image is likely to increase healthy lifestyle practices. It can be found in the results that there is a significant relationship between body image and exercise, and that exercise is likely to increase as body image satisfaction does.

5.6. Results pertaining to barriers and benefits to exercise participation moderating the relationship between exercise and body image.

To determine if benefits and barriers moderate the relationship between exercise and body image, a hierarchical moderated multiple regression was employed. Body image acted as the dependent variable, training hours as the independent variable and barriers to exercise acted as a moderator variable.

5.6.1. Results pertaining to Specific Hypothesis 1

The Specific Hypothesis 1, as mentioned in Chapter Three (Methodology), is: barriers against exercise participation will moderate the relationship between exercise participation (training hours) and body image. The results obtained by this study report that this hypothesis is not supported, and that barriers to exercise do not moderate the relationship between exercise and body image in this sample.

Apart from the limitations posed by the small sample size, other reasons why no significant results were found could be due to inaccurate reporting by the participants, which may have been influenced by their own or societal expectations of what is acceptable. The

barriers explored in the questionnaire did not assess equally for cultural and societal expectations and intrinsic barriers against exercise. This could suggest that the questionnaire used may not have been culturally sensitive to a changing South African context, despite its successful use with South African students in earlier studies by Grubbs and Carter (2002) and Nolan et al. (2011). Further attention given to the perceived societal expectations, such as those discussed by social comparison theory, may have led to different results. Cultural expectations within the South African context may vary due to its multicultural context.

The predominantly female sample is also likely to have influenced the results, as male and female participants' barriers against exercise differ (Naseer et al., 2013), especially due to the increased attention placed on the body whilst in exercise environments (Koyuncu et al., 2010). Another factor to consider is that women have been found to be more cognitively invested in their body appearance, which is likely to increase exercise participation (Muth & Cash, 1997). Considering this, it is surprising that even though the sample consisted mainly of females, 40.9 % of the sample did not engage in exercise. It is also unusual that little research is available on a primarily female university sample due to the common assumption that females are more concerned with their bodies (Lovell et al., 2010). The current research is able to enrich the limited pool of knowledge by offering findings on female exercise perceptions, exercise and body image.

5.6.2. Results pertaining to Specific Hypothesis 2

The Specific Hypothesis 2, as mentioned in Chapter Three (Methodology), is: benefits of exercise participation will moderate the relationship between exercise participation (training hours) and body image. The results obtained by this study report that this hypothesis is not supported and that benefits to exercise do not moderate the relationship between exercise and body image in this sample.

Apart from the limitations posed by the small sample size, other reasons why no significant results were found could be due to the skewed gender distribution. The current study consisted primarily of female participants which, according to Hausenblas and Fallon (2006) may result in lower effect sizes than for male participants, due to male focus on muscle and female focus on weight-loss. Previous literature reports the benefits of appearance to be moderating factors in the relationship between exercise and body image (Homan & Tylka, 2014). This is inconsistent with the findings in this study; however, a broader range of benefits and the inclusion of barriers were utilised when considering moderating variables in this study. It is possible that if one benefit, such as the benefit of appearance used in Homan and Tylka's (2014) study, were considered on its own, a significant relationship may have been observed, especially due to the large role played by appearance in determining body image. The addition of barriers in the current study may have influenced the results.

CHAPTER SIX

6. CONCLUSION

The relationship between exercise and body image has received much attention over the years (Campbell & Hausenblas, 2009; Furnham et al., 2002; Ingledew & Sullivan, 2002; Koyuncu et al., 2010; Krishen & Worthen, 2011; Peltzer & Pengpid, 2012). Exercise is an important component of body image development and mental health. It has been found that the individual can benefit from regular exercise; however, literature also suggests that there are barriers that impede participation in exercise (Lovell et al., 2010; Nolan et al., 2011). Unfortunately, there is limited research regarding the benefits and barriers of exercise as moderators on the relationship between exercise and body image within a university population. This study aimed to add to this limited knowledge base and act as a starting point for future research on the topic.

The positive role exercise plays in physical and mental health has been firmly established. Poor exercise participation (Janse van Rensburg & Surujlal, 2013; Silliman et al., 2004; Tumusiime & Frantz, 2006) may lead to unhealthy lifestyles as well as physiological and psychological problems. Research in this area is of importance as a greater understanding of this field can assist in better promotion of healthy lifestyles.

The findings obtained in this study indicate that the more exercise benefits are perceived, the more likely the university student is to exercise. It also found that the barriers perceived are likely to influence exercise participation. Although relationships were found between the barriers and benefits of exercise and body image, no significant results were found when testing if barriers and benefits moderate the realtionship between exercise and body image. After a review of the literature, no studies were found on exercise perceptions as moderators in the relationship between exercise and body image. Further exploration in this direction are encouraged.

Body image and exercise participation are important constructs to understand for clinicians when treating adolescents and young adults; specifically those adolescents and young adults dealing with body image dissatisfaction, and particularly since there has been a decline in physical activity and a shift towards a more sedentary lifestyle (Grubbs & Carter, 2002; Tumusiime & Frantz, 2006) during this phase of life. A greater understanding of the barriers and benefits perceived by the patient can assist with treatment focused on body image. It can also assist in promoting healthier lifestyle choices, physical health and mental health. Along with a greater understanding of exercise perceptions, the current research is able to enrich the limited pool of knowledge by offering findings on female exercise perceptions, exercise and body image.

Limitations and Suggestions for Future Research

Bassett and Martin Ganis (2011) suggest that the use of multiple measures produce richer, more comprehensive results. Taking this into account, by using multiple measures for the measurement of exercise perceptions (benefits and barriers) and body image, the results may have differed. Thus, it is recommended that multiple measures be used for future research.

A total of 133 participants began the online survey, with only 93 completing it. Considering the number of participants who did not complete the survey, a larger sample size is required in order to obtain the adequate number of completed surveys required for a moderated multiple regression analysis. Of the 93 participants who completed the questionnaire, only 49 surveys were usable in data analysis. Thus, the study's results should be interpreted with caution. While offering the survey online may be convenient for the participants, it is possible that the problem of incomplete surveys may be avoided by administering the survey face to face. This may also give the opportunity for the researcher to clarify any misunderstandings. Clarification may also assist in gaining accurate data as there

are a vast number of languages spoken in South Africa which may designate different meanings to certain concepts.

The current study's findings were based on a significantly disproportionate gender sample with the majority being female. This skewed the results and hampered its generalisability. Future studies should aim to gain a more even sample in relation to gender, as well as a larger sample size.

The literature and instruments utilised in this study were primarily based on a Western standpoint; however, the majority of the participants are of Black African descent and come from a different cultural standpoint. There is a difference in the ideal body across cultures that needs to be considered (Markula, 2007; Mwaba & Roman, 2009). Beauty and the desired image are not always consistent with that of the Western world. An increased pool of literature on this topic with regard to a Black African population may offer better insight for future studies, as there is currently a limited understanding.

"For me, exercise is more than just physical—it's therapeutic." – Michelle Obama

"To lose confidence in one's body is to lose confidence in oneself." – Simone de Beauvoir

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8. APPENDICES

APPENDIX A: Body Image and Exercise Information Letter

University of Johannesburg

Department of Psychology

Research Title: Reasons and Barriers for Exercise as Moderators in the Relationship between Exercise and Body Image within a Student Population

INFORMATION SHEET

You are invited to participate in a research study conducted by a student psychologist from the University of Johannesburg. Your participation is voluntary. Please take as much time as you need to read this information sheet.

PURPOSE OF THE STUDY

The purpose of this study is to investigate whether participating in exercise has an influence on an individual's body image satisfaction or dissatisfaction. Along with this the moderating variables: reasons for, and barriers to exercise will also be considered in this relationship.

PROCEDURES

Participation in the study entails completing an online self-report questionnaire. The questionnaire will include a short biographical section, multiple choice questions on exercise benefits and barriers, and multiple choice questions on body image. The questionnaire will be accessed through uLink, under announcements. In order to participate you are required to provide consent online by ticking the "continue with questionnaire" option. There are approximately 120 multiple choice questions that are to be completed in one sitting.

POTENTIAL RISK

No harm or risks are foreseen during this process but should you feel any discomfort during this study please feel free to contact the researcher or researcher's supervisor by email. Referrals will be made to PsyCad should they be necessary. Should you require immediate help please contact either SADAG (0800121314) or Lifeline (0861322322) for crisis intervention.

PAYMENT/ COMPENSATION FOR PARTICIPATION

You will not receive any payment or compensation for your participation in this research study.

PRIVACY AND CONFIDENTIALITY

All information obtained in this study will be kept anonymous and confidential, and no identifying information will be obtained. Only the researcher and researcher's supervisors will have access to the data, therefore keeping it confidential. Privacy and confidentiality will be maintained by keeping the data secure through password-protection. Upon completion of the data analysis in the dissertation, the data will be destroyed.

PARTICIPATION AND WITHDRAWAL

It is your decision to participate or not and if you chose to part-take in this study, you may withdraw at any point without any repercussions.

YOUR RIGHTS AS A PARTICIPANT

You have the right to withdraw your consent at any time. You have the right to have your questions about the procedures answered. If you have any questions as a result of reading this information sheet, you should ask the researcher before partaking in the study.

IDENTIFICATION OF THE RESEARCHERS

If you have any questions or concerns with regards to this study, please contact the researcher or the research supervisors.

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APPENDIX B: Body Image and Exercise Questionnaire

As discussed in class the questions that follow inform current research within the Department of Psychology into the relationship between exercise and body image.

All responses are strictly confidential.

By continuing with the questionnaire you are consenting to your responses being used in the study.

- Continue with the questionnaire
- Exit the questionnaire

This biographical information is strictly confidential and cannot be used to identify study participants.

Age (in years)

16 - 80

Gender

- Male
- Female
- Other (please specify)

Ethnicity

- Black
- Coloured

- Indian
- White
- Other (please specify)

Which year of study are you in?

- First year
- Second year
- Third year

What type of exercise do you do?

- Aerobic
- Anaerobic
- Both

How many hours do you train per week?

- None
- 1-3 hours
- 4-6 hours
- 7-12 hours
- More than 12

For how many years have you been exercising?

0 - 20

How many units of alcohol do you consume per week?

0 – 30, more than 30

How many cigarettes do you smoke per day?

0 – 40, more than 40

Relationship status

- Single
- In a relationship
- Cohabiting
- Engaged
- Married
- Divorced
- Other (please specify)

Are you currently participating in a sport?

yes / no

What is your weight in kilograms and your height in meters?

Weight

Height

Below are statements that relate to ideas about exercise. Please indicate the degree to which you agree or disagree with the statements below

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I enjoy exercise.	●	●	●	●
2. Exercise decreases feelings of stress and tension for me.	●	●	●	●
3. Exercise improves my mental health.	●	●	●	●
4. Exercising takes too much of my time.	●	●	●	●
5. I will prevent heart attacks by exercising.	●	●	●	●
6. Exercise tires me.	●	●	●	●
7. Exercise increases my muscle strength.	●	●	●	●
8. Exercise gives me a sense of personal accomplishment.	●	●	●	●
9. Places for me to exercise are too far away.	●	●	●	●
10. Exercising makes me feel relaxed.	●	●	●	●
11. Exercising lets me have contact with friends and persons I enjoy.	●	●	●	●
12. I am too embarrassed to exercise.	●	●	●	●
13. Exercising will keep me from having high blood pressure.	●	●	●	●
14. It costs too much to exercise.	●	●	●	●
15. Exercising increases my level of physical fitness.	●	●	●	●
16. Exercise facilities do not have convenient schedules for me.	●	●	●	●
17. My muscle tone is improved with exercise.	●	●	●	●
18. Exercising improves functioning of my cardiovascular system.	●	●	●	●
19. I am fatigued by exercise.	●	●	●	●
20. I have improved feelings of well being from exercise.	●	●	●	●
21. My spouse (or significant other) does not encourage exercising.	●	●	●	●
22. Exercise increases my stamina.	●	●	●	●
23. Exercise improves my flexibility.	●	●	●	●

	Strongly Disagree	Disagree	Agree	Strongly Agree
24. Exercise takes too much time from family relationships.	●	●	●	●
25. My disposition is improved with exercise.	●	●	●	●
26. Exercising helps me sleep better at night.	●	●	●	●
27. I will live longer if I exercise.	●	●	●	●
28. I think people in exercise clothes look funny.	●	●	●	●
29. Exercise helps me decrease fatigue.	●	●	●	●
30. Exercising is a good way for me to meet new people.	●	●	●	●
31. My physical endurance is improved by exercising.	●	●	●	●
32. Exercising improves my self-concept.	●	●	●	●
33. My family members do not encourage me to exercise.	●	●	●	●
34. Exercising increases my mental alertness.	●	●	●	●
35. Exercise allows me to carry out normal activities without becoming tired.	●	●	●	●
36. Exercise improves the quality of my work.	●	●	●	●
37. Exercise takes too much time from my family responsibilities.	●	●	●	●
38. Exercise is good entertainment for me.	●	●	●	●
39. Exercising increases my acceptance by others.	●	●	●	●
40. Exercise is hard work for me.	●	●	●	●
41. Exercise improves overall body functioning for me.	●	●	●	●
42. There are too few places for me to exercise.	●	●	●	●
43. Exercise improves the way my body looks.	●	●	●	●

The following page contains a series of statements about how people might think, feel, or behave. You are asked to indicate the extent to which each statement pertains to you personally.

	Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree
1. Before going out in public, I always notice how I look.	●	●	●	●	●
2. I am careful to buy clothes that will make me look my best.	●	●	●	●	●
3. I would pass most physical-fitness tests.	●	●	●	●	●
4. It is important that I have superior physical strength.	●	●	●	●	●
5. My body is sexually appealing.	●	●	●	●	●
6. I am not involved in a regular exercise program.	●	●	●	●	●
7. I am in control of my health.	●	●	●	●	●
8. I know a lot about things that affect my physical health.	●	●	●	●	●
9. I have deliberately developed a healthy lifestyle.	●	●	●	●	●
10. I constantly worry about being or becoming fat.	●	●	●	●	●
11. I like my looks just the way they are.	●	●	●	●	●
12. I check my appearance in a mirror whenever I can.	●	●	●	●	●
13. Before going out, I usually spend a lot of time getting ready.	●	●	●	●	●
14. My physical endurance is good.	●	●	●	●	●
15. Participating in sports is unimportant to me.	●	●	●	●	●
16. I do not actively do things to keep physically fit.	●	●	●	●	●
17. My health is a matter of unexpected ups and downs.	●	●	●	●	●
18. Good health is one of the most important things in my life.	●	●	●	●	●
19. I don't do anything that I know might threaten my health.	●	●	●	●	●
20. I am very conscious of even small changes in my weight.	●	●	●	●	●

	Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree
21. Most people would consider me good-looking.	●	●	●	●	●
22. It is important that I always look good.	●	●	●	●	●
23. I use very few grooming products.	●	●	●	●	●
24. I easily learn physical skills.	●	●	●	●	●
25. Being physically fit is not a strong priority in my life.	●	●	●	●	●
26. I do things to increase my physical strength.	●	●	●	●	●
27. I am seldom physically ill.	●	●	●	●	●
28. I take my health for granted.	●	●	●	●	●
29. I often read books and magazines that pertain to health.	●	●	●	●	●
30. I like the way I look without my clothes on.	●	●	●	●	●
31. I am self-conscious if my grooming isn't right.	●	●	●	●	●
32. I usually wear whatever is handy without caring how it looks.	●	●	●	●	●
33. I do poorly in physical sports or games.	●	●	●	●	●
34. I seldom think about my athletic skills.	●	●	●	●	●
35. I work to improve my physical stamina.	●	●	●	●	●
36. From day to day, I never know how my body will feel.	●	●	●	●	●
37. If I am sick, I don't pay much attention to my symptoms.	●	●	●	●	●
38. I make no special effort to eat a balanced and nutritious diet.	●	●	●	●	●
39. I like the way my clothes fit me.	●	●	●	●	●
40. I don't care what people think about my appearance.	●	●	●	●	●
41. I take special care with my hair grooming.	●	●	●	●	●
42. I dislike my physique.	●	●	●	●	●

	Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree
43. I don't care to improve my abilities in physical activities.	●	●	●	●	●
44. I try to be physically active.	●	●	●	●	●
45. I often feel vulnerable to sickness.	●	●	●	●	●
46. I pay close attention to my body for any signs of illness.	●	●	●	●	●
47. If I'm coming down with a cold or flu, I just ignore it and go on as usual.	●	●	●	●	●
48. I am physically unattractive.	●	●	●	●	●
49. I never think about my appearance.	●	●	●	●	●
50. I am always trying to improve my physical appearance.	●	●	●	●	●
51. I am very well coordinated.	●	●	●	●	●
52. I know a lot about physical fitness.	●	●	●	●	●
53. I play a sport regularly throughout the year.	●	●	●	●	●
54. I am a physically healthy person.	●	●	●	●	●
55. I am very aware of small changes in my physical health.	●	●	●	●	●
56. At the first sign of illness, I seek medical advice.	●	●	●	●	●
57. I am on a weight-loss diet.	●	●	●	●	●

Indicate the option that best describes you.

	Never	Rarely	Sometimes	Often	Very Often
58. I have tried to lose weight by fasting or going on crash diets.	●	●	●	●	●

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Indicate the option that best describes you

	Very Underweight	Somewhat Underweight	Normal Weight	Somewhat Overweight	Very Overweight
59. I think I am	●	●	●	●	●

Indicate the option that best describes your experience

	Very Underweight	Somewhat Underweight	Normal Weight	Somewhat Overweight	Very Overweight
60. From looking at me, most other people would think I am	●	●	●	●	●

Use the scale below to indicate how dissatisfied or satisfied you are with each of the following areas or aspects of your body

	Very Dissatisfied	Mostly Dissatisfied	Neither Satisfied nor Dissatisfied	Mostly Satisfied	Very Satisfied
61. Face (facial features, complexion)	●	●	●	●	●
62. Hair (color, thickness, texture)	●	●	●	●	●
63. Lower torso (buttocks, hips, thighs, legs)	●	●	●	●	●
64. Mid torso (waist, stomach)	●	●	●	●	●
65. Upper torso (chest or breasts, shoulders, arms)	●	●	●	●	●
66. Muscle tone	●	●	●	●	●
67. Weight	●	●	●	●	●
68. Height	●	●	●	●	●
69. Overall appearance	●	●	●	●	●